Attachment 2 - Chemical List and MSDS

Product Name	Manufacturer Name	
140 with Pumice	Schaeffer Mfg. Company	
ABC Fire Extinguisher	Ansul	
Acetylene	Airgas, Inc.	
Aervoe Survey Marking Paint	Aervoe	
Air Brake Anti-Freeze & Conditioner	CRC Industries, Inc	
Aluminum Welding Rod 4046	Radnor Welding Products	
Aluminum Welding Rod 5536	Radnor Welding Products	
American Industrial Oil	Chevron	
Anaerobic Gasket Maker	Permatex, Inc.	
Anti-Seize Lubricant	Permatex	
Arc-Air Gouging Carbons	Cigweld ESAB Brand	
Argon	Airgas, Inc.	
Aries 46, 100, 150, 220, 320	Chevron	
Armor All Original Protectant Spray	The Armor All/STP Products Company	
Battery AAA, AA 1.5 Volt	Rayovac	
Blue DEF	Motorcraft	
Blue RTV Silicone (Sensor Safe)	Permatex, Inc.	
Brake Cleaner	CRC Industries	
Brake Fluid DOT 3	Warren Oil	
Brakleen Brake Parts Cleaner - Non-Chlorinated	CRC Industries	
	ESAB	
Brazo-Flux		
Calcium Chloride	AquaPhoenix	
Chain and Cable Lubricant	CRC Industries	
Chevron Rando HD	Chevron	
Chevron Automatic Transmission Fluid SAE 50	Chevron	
Chevron Delo 400 LE SAE 15W-40	Chevron	
Chevron Delo 80W-90, 80W-140 Gear Lubricant	Chevron	
Chevron Delo Extended Life Coolant	Chevron	
Chevron Delo Grease EP	Chevron	
Chevron Delo Syn-Gear ZDM SAE 75W-90	Chevron	
Chevron Drive Train Fluid HD	Chevron	
Chevron Hydraulic Oil AW 32 46 68	Chevron	
Chevron Polyurea EP Grease 1	Chevron	
Chevron Polyurea EP Grease 2	Chevron	
Chevron Tegra Synthetic Gear Lubricant ISO Grades	Chevron	
Diesel 2 Chevron Texaco	Chevron	
Diesel 911	Power Service	
Diesel Fuel	Citgo	
Diesel Fuel Supplement + Cetane Boost	Power Service	
Fast Orange Pumice Hand Cleaner	Permatex	
Gasket Sealant (High Tack)	Permatex	
Gasket Sealant (Formula 1)	Loctite Corporation	
Gasoline	Marathon	
Greased Lightning Cleaner and Degreaser	HomeCare Labs	
HEET Gas Line Antifreeze	Gold Eagle	
Krylon Indoor/Outdoor	Krylon Products	
Lectra Motive Electrical Parts Cleaner	CRC	
Lens Cleaning Towelette	3M	
Loctite 242 Threadlocker	Henkel Corporation	
Loctite 277 Threadlocker	Henkel Corporation	
Lubriplate air tool lubricant	Lubriplate Lubricants Company	
Lucas Heavy Duty Oil Stabilizer	Lucas Oil	
MAPP Gas Airgas		

MeanStreak Marking Stick	Sanford
Nitrogen	Airgas
No Touch Original Tire Care 23549	ITW
Oatley ABS Medium Special Milky Clear or Black Cement	Oatley Inc
Oxygen	Airgas
Penetrating Catalyst Lubricant	Blaster
Permatex High Temp Red RTV Silicone Sealant	Permatex
Pipetite Stik	Pipetite
Pipe Thread Compound TFE	Anit-Sieze
Power Steering Fluid	Airgas
Propane	Rubber Maid
Rotella Mulitgrade 15W-40 Oil	Shell/Rotella
RPM Gear Lubricant	Chevron
Sharpie Marking Pens	Simple Green
Simple Green All Purpose Cleaner	Ashland
Starting Fluid	Starfire
Synthetic Gear Lubricant 50W	Phillips 66
Synthetic Gear Lubricant 75W-90	Valvoline
Synthetic Motor oil (Synpower 75-90W)	Whitlam
Thread Compound ES	Chevron
Ultra Duty Grease EP	WD-40
WD-40	Radnor Welding Products
Welding Electrode	SC Johnson
Whistle All Purpose Cleaner	Diversey
Windex Glass Cleaner	Napa
Windshield Fluid	South Wind



MATERIAL SAFTEY DATA SHEET

#2 Diesel Fuel

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:

#2 Diesel Fuel

Synonyms:	CARB Diesel TF3; CARB Diesel; CARB Diesel 10% CARB Diesel Ultra Low Sulfur - Dyed and Undyed EPA Low Sulfur Diesel Fuel - Dyed and Undyed EPA Off Road High Sulfur Diesel - Dyed High Sulfur Diesel Fuel; Low Sulfur Diesel Fuel No. 2 Diesel Fuel Oil No. 2 High Sulfur Diesel - Dyed No. 2 Low Sulfur Diesel - Dyed; No. 2 Low Sulfur Diesel - Undyed No. 2 Low Sulfur Diesel - Dyed; No. 2 Low Sulfur Diesel - Undyed No. 2 Diesel with Renewable Diesel No. 2 Ultra Low Sulfur Diesel - Oyed; No. 2 Ultra Low Sulfur Diesel - Undyed Super Diesel Fuel; Super Diesel Fuel II-LS Virgin Diesel Fuel; Super Diesel Fuel II-LS Virgin Diesel Fuel; Super Diesel Fuel II-LS Virgin Diesel Fuel; Super Diesel Fuel II-LS
Manufacturer information:	Petroleum Products Corporation 900 S. Eisenhower Blvd Middletown, Pa. 17057 717-939-0466
Intended Use:	Fuel
MSDS Information:	1-800-692-6016 mscs@ppeterminals.com
Emergency Phone Numbers:	Spill, Leak, Fore or Accident Call PERS North America 1-800-633-8263

2. HAZARDS IDENTIFICATION

Enjergency Overviey	NEPA
WARNING	\triangle
Flammable Liguid and Vapor	
skin fritant	
Aspiration Mazare	• • • • • • • • • • • • • • • • • • •
Possible Skin Cancer Hezard	\sim

Appearance: Straw colored. May be dyed yellow o: red Physical Form: Liquid Odor: Diesel fuel

Potential Health Effects

724-728-0926

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Milo to moderate skin initiant. Contact may cause redness, itching, a burning sensation, and skin damage. Prolonged or

Repeated contact may cause drying and cracking of the skin, dermatitis (inflammation), burns, and severe skin damage. Not acutely toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

Inhalation (Breathing): No information available on acute toxicity.

Ingestion (Swallowing): Low degree of toxicity by ingestion, ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the respiratory tract, irritation of the digestive tract, nausea, diarrhea and signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Other Comments: This material may contain varying concentrations of polycyclic aromatic hydrocarbons (PAHs) which have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to an exaggarated sunburn, and is temporary in duration if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), skin eruptions (pimples), and possible skin cancers.

Pre-Existing Medical Conditions: Conditions aggravated by excosure may include skin disorders. See Section 11 for additional Tuxicity Information.

3. COMPOSITION / INFORMATION	ON INGREDIENTS
Çomponent	CAS Concentration (wt 2);

çomponent	CAS	Concentration (wt %)
ruei Oli No, 2	56476+30-2	100
Naphihalene	91-20-3	<1

4. FIRST AID MEASURES

Eye: If initiation or redness develops from exposure, fluen eyes with clean water. If symptoms persist, seek medicat attention.

Skin: Remove contaminated shoes and clothing, and flush effected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek modical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If viotim is drowsy or unconscious and vomiting, place on the left aide with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek madical attention.

5, FIRE-FIGHTING MEASURES

NFPA 704 Hazard Class

Health: 1 Flammability: 2 Instability: 0 (0-Minimal, 1-Sight, 2-Moderate, 3-Serious, 4-Severe)

Unusual Fire & Explosion Hazards: Flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., statio electricity, pilot lights, mechanical/electricial equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapore may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. If container is not properly cooled, the can rupture in the heat of a fire. Vapors are heavier than air and can accumulate in low areas. Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes. See Section 9 for Flammable Properties Including Plash Point and Flammable (Explosive) Limits

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion proof electrical acuipment is recommended. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Section 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop spill/release if it can be done with minimal risk. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use foam on spills to minimize vapors (see Section 5). Use water sparingly to minimize environmental contemination and reduce disposal requirements. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods for Containment and Clean-Up: Notify fire authonties and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling: Wear protective gloves. Wash thoroughly after handling. Use good personal hygiene practices and wear eppropriate personal protective equipment. Open container slowly to relieve any pressure. Bond and ground all equipment when transfering from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NSPA-704 and/or APt RP 2003 for specific bonding/grounoling requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 290FR 1910.146. Do not wear containnated clothing or shoes. Keep containnated clothing away from sources of lightion such as sparks or open frames, "Empty" containers retain residue and may be dangerous. Do not pressurize, out, weld, braze, solder, drill, gind, or expose such containers to heat, figure, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed or in tanks which container of have contained and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations. ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Conditions for safe storage: Keep container(s) tightly closed. Use and store this material in cool, dry wellventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detaoned storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION			
Component	ACGIH	ÓSHÁ	Other:
Fuð Oll No. 2	TWA: 100 mg/m		
Naphtha'ane	Skin T(VA: 10 ppm STEL: 15 ppm Skin	TWA; 10 ppm TWA: 50 mg/m ³	Twa: 0.2 mg/m² (as total of 17 PNA's measured by NIOSH Mathod 5505) (CondoPh/line Guicer res)

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information. Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required Personal Protective Egulpment (PPE);

Eye/Face: The use of eye protection that meets or exceeds ANS! 2.87.1 is recommended to protect against potential eye contact, imitation, or injury. Depending on conditions of use, a face shield may be necessary.

Skin: The use of gloves impervicus to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the performance of their products. Suggested protective materia's: Nitrile Respiratory: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANS! 283.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (MUC) as directed by regulation or the manufacturer's instructions, in oxygen deficient (less than 19.5 percent oxygen) situations, or other conditions that are immediately dangerous to life and health (IDLH).

Other Protective Equipment: Eye wash and guide-dranch shower facilities should be available in the work area. Theroughly clean shoes and wash contaminated dothing before reuse.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 alm). Data represent typical values and are not intended to be specifications. Appearance: Straw colored. May be dyed yellow or red Physical Form: Liquio Odor: Diesel fuel Odor Threshold: No data pH: Not applicable Vapor Pressure: 0,40 mm Ho Vapor Density (sir=1): >1 Bolling Point/Range: 300-691°F / 149-366°C Melting/Freezing Point: No data Solubility in Water: Negligible Partition Coefficient (n-octanol/water) (Kow): No data Specific Gravity: 0.81-0.88 @ 60°F (15.6°C) Bulk Density: 7.08 lbs/gal Viscosity: 1.7-4.1 c5t @ 40°C Evaporation Rate (nBuAc=1): <1 Flash Point: 125-180°F / 52-82°C Test Method: Tag Closed Cup (TCC), ASTM D56 LEL (vol % in air): 0.3

UEL (vol % in air): 10.0 Autoignition Temperature: 500°F / 260°C

10. STABILITY AND REACT/VITY

Stability: Stable under normal ambient and anticipated conditions of storage and handling. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions to Avoid Avoid high temperatures and all sources of ignition. Prevent vapor accumulation. Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidents such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc. Hazardous Decomposition Products: Combustion can yield oxides of carbon, nitrogen and sulfur

Hazardous Decomposition Products: Contoustion can yield oxides of carbon, nitrogen and sultur Hazardous Polymerization: Not known to occur.

A STREET, AND A STREET, AND A STREET, A STREET, AND A STRE	
11. TOXICOLOGICAL INFORMATION	

Chronic Date:

Fuel Oll No. 2

Carcinogenicity: Application of fuel oil No. 2 to mouse skin, three times a week (duration unspecified), resulted in an increased incidence of skin tumors. Fuel oil No. 2 has not been identified as a carcinogen by NTP, IARC, or OSHA.

Naphthalene

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The National Toxicology Program (NTP) conduced that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been increased according to the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been increased according to the nose. NTP found some evidence of carcinogenicity in the second second

Acute Data:

Ling of the second seco			
		ومراجع مساجدة ومحمد الباريني والكرائي مستحصب فكالجود والمساحد محمدهم	and the second
Component	Graf LD50	Demosi LOSO	inhalation _C50
Contratation in the second sec			ISTICLES CONTRACTOR
8 96 OF NO. 2	14.5 mi/kg (rat)	No data	No data
		And the second se	

12. ECOLOGICAL INFORMATION

When middle distillate hydrocarbons escape into the environment due to leaks or splils, most of their constituent hydrocarbons will evaporate and be photodegraded by reaction with hydroxyl radicals in the atmosphere. The halflives in air for many of the individual hydrocarbons is less than one day. Less volatile hydrocarbons can persist in the aqueous environment for longer periods. They remain floating on the surface of the water; those that reach soll or adment biodegrade relatively sickly. Soll contaminated with middle distillates can develop adapted microbial species able to use the fuel as a carbon source; soil aeretion and nutrient supplementation can enhance this biodegradation. Reported LC50/EC60 values for water-soluble fractions of middle distillates are usually in the range of 10 to 100 mg/iter. Adverse effects on the gills, pseudobranch, kidney and nasal mucose have been reported in fish involved in spills of middle distillates. Juvenile clams may be particularly sensitive to marine sediments contaminated as a result of spilled material. Direct toxicity and fouling of sea birds can occur if birds dive through floating layers of spilled material. Phytotoxic effects of middle distillate hydrocarbons have been reported following exposure of plants to sprays or vapors. Lack of seed germination and inhibition of seeding growth

13. DISPOSAL CONSIDERATIONS

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely the identified as a federally regulated RCRA hazardous waste for the following characteristic(s) shown below. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could aubject it to regulation as a hazardous waste. Container contents should be completely used and containers should be amptied prior to discard. Container residues and rinseates could be considered to be hazardous wastes.

724-728-0926

EPA Waste Number(s) • D001 - Ignilability characteristic

14. TRANSPORTATION INFORMATION

 U.S. Repartment of Transportation (DOT)

 Shipping Description:
 Heating oil, light, Combustible liquid, UN1202, III

 Non-Bulk Package Marking:
 Not Regulated (49 CFR 173.150(f)(2))

 Non-Bulk Package Labeling:
 Not Regulated (49 CFR 173.150(f)(2))

 Bulk Package/Placerd Marking:
 Combustible / 1202

Packaging - References: None; None; 49 CFR 173 241 (Exceptions; Non-bulk; Bulk) Hazardous Substance: See Section 15 for RQ's Emergency Response Guide: 128 Note: This product has been reclassified as a Combustible Liquid for domestic lano transportation using 49 CFR 173.150(f). Shipping description may be modified by placing the UN or NA number as the first element. This order becomes mandatory on January 1, 2013. International Maritime Dangerous Goods (IMDG) Shipping Description: UN1202, Heating oil, light, 3, III, (52 Non-Bulk Package Marking: Heating oil, Eght. UN1202 Labels: Flammaole liquid Placards/Marking (Bulk): Flammable / 1202 Packaging - Non-Bulk: P001, LP01 EMS: F-E, S-E Note: Proper Shipping name can be: Gas Oil or Diesel fuel or Heating Oil, light International Civil Aviation Org. / International Alr Transport Assoc. (ICAC/IATA) UN/ID #: UN1202 Proper Shipping Name: Heating oil, light Hazard Class/Division: 3 Packing Group: ill Non-Bulk Package Marking: Heating oil, Eght UN1202 Labels: Flammable liquid ERG Code: 3L

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	Y 309	309	310
Max. Net Qty. Per Pockage:	10 L	60 L	220

15. REGULATORY INFORMATION

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds): This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372. CERCLA/SARA - Section 311/312 (Title III Hazard Categories) Acute Health: Yes Chronic Health: Yes Fire Hazard: Yes Pressure Hazard: No Reactive Hazard: No CERCLA/SARA - Section 313 and 40 CFR 372: This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

ż	PAMAAnat	Concontration but %	de minimis
		Concentration (W1 76)	A REAL PROPERTY AND A REAL
		and the second se	0.1%
1	Nachibalara	SI 5	Q.179
		A CONTRACTOR OF A CONTRACTOR O	the second

EPA (CERCLA) Reportable Quantity (in pounds):

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

California Proposition 65:

Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

	Component	Type of Toxicity
	Naphthalene	Cancer
	Toiuene	Developmental Toxicant
1	Benzene	Cancar
		Developmental Toxicant
		Male Reproductive Textcent
	Various Polycyclic Aromatic Hydrocarbone	SKin Cancer

Canadian Regulations:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Regulations.

WHMIS Hazard Class 83 - Combustible Liquids

Ю2А 02В

National Chemical Inventories:

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA. All components are either on the DSL, or are exempt from DSL listing requirements.

16. OTHER INFORMATION

Issue Date: 11-Jul-2007 Status: Final Provious Issue Date: 11-Jul-2007 Revised Sections or Basis for Revision: Exposure Imits (Section 8) MSDS Code: 724240 MSDS Locad: 724240

MSDS Legend:

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service Registry; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; LEL = Lower Explosive Limit, NE = Not Established; NEPA = National Fire Protection Association; NTP = National Toxicology Program, OSHA = Occupational Safety and Haalth Administration; PEL = Fermissible Exposure Limit (OSHA); SARA = Superfund

Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); YLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

MATERIAL	SAFETY	DATA	SHEET
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SECTION 1 - PRODUCT/MANUFACTURER'S IDENTITY

PRODUCT NAME: #140 with Pumice

PRODUCT USE: WATERLESS HAND CLEANER WITH PUMICE

MANUFACTURED BY: **KUTOL PRODUCTS COMPANY** 7650 CAMARGO ROAD CINCINNATI, OH 45243 24 HR. EMERGENCY TELEPHONE NUMBER:800-424-9300TELEPHONE NUMBER FOR INFORMATION:513-527-5500

DATE PREPARED: 1/4/10

SECTION 2 – HAZARDOU	S INGREDIENTS/	IDENTITY	INFORMATI	ON				
HAZARDOUS CHEMICAL IDENT ALIPHATIC HYDROCARBON	ITY <u>CAS NO</u> 64742-96-7	<u>).</u>	OSHA PEL	ACGII 400	<u>H TLV</u>	OTHER LIMI <u>RECOMMEND</u>		<u>% (OPTIONAL)</u>
THIS COMPOUND OR ANY C OSHA, NTP OR IARC AS A C NOR DO THEY HAVE ESTAB EXCEPT AS LISTED ABOVE.	ARCINOGEN OR POT	ENTIAL CAR	CINOGEN,					
SECTION 3 – PHYSICAL/C	CHEMICAL CHAR	ACTERIST	ICS					
VAPOR VAPOR	G POINT: 210-212 F R PRESSURE (mm Hg) R DENSITY (AIR = 1): I BILITY IN WATER: APF	V/A	MELT EVAP APPE	ING POINT: / ORATION RA ARANCE AN	ATE (BUTYL A	CETATE = 1):<1 CK GREY PASTI		
SECTION 4 – FIRE AND E	XPLOSION HAZA	RD DATA						
FLASH POINT (METHOD USED):	225 F TAG OPEN CUP	LEL: N/A	EXTINGUI	SHING MEDI	A: <i>FOAM, CO</i> 2	2 OR DRY CHEN	<i>IICAL</i>	
FLAMMABLE LIMITS: N/A		UEL: N/A		-		RES: SELF CON		-
UNUSUAL FIRE AND EXPLOSIO	N HAZARDS: NONE		RELE	ASES (SEE)	HAZARDOUS	DECOMPOSITIO	ON).	
SECTION 5 – REACTIVITY	′ DATA							
CHEMICAL STABILITY: CONDITIONS TO AVOID: NONE HAZARDOUS DEPOLYMERIZATI CONDITIONS TO AVOID: NONE			THE HYD INCOMPATIBII	RE MAY BE F ROCARBONS	FORMED: CO2 S.	PRODUCTS: IN / 2, CARBON MON ID):NONE	-	
SECTION 6 – HEALTH HA	ZARD DATA							
ROUTES OF ENTRY: INHALAT HEALTH HAZARDS (ACUTE AND CARCINOGENICITY: 2 YES	CHRONIC): NONE	_				NO EYES: 🛛 OSHA REGUL		-
SIGNS AND SYMPTOMS OF EXF MEDICAL CONDITIONS GENERA			E: NO MEDICA	L CONDITIOI				BY THIS
PRODUCT. EMERGENCY AND FIRST AID PROCEDURES: INGESTION: DO NOT INDUCE VOMITING - CONTAINS HYDROCARBONS. CONSULT PHYSICIAN. EYES:FLUSH WITH WATER FOR 15 MINUTES. CONSULT PHYSICIAN. DO NOT RUB EYES.								
SECTION 7 – PRECAUTIO	NS FOR SAFE H	ANDLING	AND USE					
STEPS TO BE TAKEN IN CASE N WASTE DISPOSAL METHOD: LA PRECAUTIONS TO BE TAKEN IN OTHER PRECAUTIONS: NONE	NDFILL WITHIN ALL L	OCAL, STAT	E AND FEDER	AL LAWS		INER		
SECTION 8 – CONTROL M	IEASURES							
RESPIRATORY PROTECTION (S	,		VEN	FILATION:	LOCAL EXH SPECIAL: N	IAUST: NONE IONE	MECHA OTHER:	NICAL: NONE
PROTECTIVE GLOVES NONE	EVE PROTECTI	ON: YES						



1. Product and Company Identification

Product name	: Acetylene, Dissolved
Chemical formula	: H-C-C-H
Synonyms	: Acetylene; Ethyne; Welding Gas; Acetylen; Ethine; Narcylen; Vinylene; UN 1001
Company	: Specialty Gases of America, Inc 6055 Brent Dr. Toledo, OH 43611
Telephone	: 419-729-7732
Emergency	: 800-424-9300

2. Composition/Information on Ingredients

Components	CAS Number	% Volume
Acetylene, Dissolved	74-86-2	100%

3. Hazards Identification

Emergency Overview

May explode when heated. Flammable gas. May cause flash fire. Electrostatic charges may be generated by flow, agitation, etc. May polymerize. Containers may rupture or explode. May cause central nervous system depression, difficulty breathing.

Potential Health Effects

Inhalation	:	Nausea, vomiting, chest pain, wheezing, headache, drowsiness, dizziness, loss of coordination, bluish skin color, suffocation, lung congestion, coma.
Eye contact	:	No information on significant adverse effects.
Skin contact	:	Rash.
Ingestion	:	Ingestion of a gas is unlikely.
Chronic Health Hazard	:	Not applicable.

4. First Aid Measures

Eye contact Skin contact Ingestion Inhalation		
Note to physicians	:	For inhalation, consider oxygen.

5. Fire-Fighting Measures

Suitable extinguishing media Specific hazards	:	Carbon dioxide, regular dry chemical. Large fires: Use regular foam or flood with fine water spray. Severe explosion hazards. Vapor/air mixtures are explosive. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.
Fire fighting	:	Nove container from fire area if it can be done without risk. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Evacuate if fire gets out of control or containers are directly exposed to fire. Evacuation radius: 500 meters (1/3 mile). Consider downwind evacuation if material is leaking. Stop flow of gas.

6. Accidental Release Measures

Occupational spill/release	:	Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away. Isolate hazard area and deny entry. Remove sources of ignition.
Additional advice	:	Ventilate closed spaces before entering. None.

7. Handling and Storage

Handling

Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

Storage

Store in accordance with all current regulations and standards. Protect from physical damage. Store outside or in a detached building. Keep separated from incompatible substances. Store in a cool, dry place. Store in a well-ventilated area. Avoid heat, flames, sparks or other sources of ignition. Grounding and bonding required. Secure to prevent tipping. Subject to storage regulation: U.S. OSHA 29 CFR 1910.101.

8. Exposure Controls / Personal Protection

Exposure limits NIOSH

: 2500 ppm Ceiling; 2662 mg/m3 Ceiling

Engineering measures/Ventilation

Ensure compliance with applicable exposure limits. Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present.

Personal protective equipment

Respiratory	: Under conditions of frequent use or heavy exposure, respiratory protection may
protection	be needed. Respiratory protection is ranked in order from minimum to
	maximum. Consider warning properties before use.

Hand protection	 For unknown concentrations or immediately dangerous to life or health – Any supplied-air respirator with a full facepiece that is operated in pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. Protective gloves are not required, but recommended.
Eye protection	: Eye protection is not required, but recommended.
Skin and body protection	: Protective clothing is not required.

9. Physical and Chemical Properties

Form	:	Gas.
Color	:	Colorless.
Odor	:	Sweet odor.
Molecular weight	:	26.04
Vapor pressure	:	7690 mmHg @ -84°C
Vapor density	:	0.90 (air = 1)
Boiling point	:	Not available.
Freezing point	:	Not available.
Water solubility	:	0.94% @ 25°C
Solvent solubility	:	Soluble: acetone, benzene, chloroform, ether.

10. Stability and Reactivity

Stability Conditions to avoid	:	May decompose violently on heating. May explode when heated. Avoid heat, flames, sparks and other sources of ignition. Containers may
	•	rupture or explode if exposed to heat.
Materials to avoid	:	Metals, oxidizing materials, halogens, metal carbide, reducing agents, halo carbons.
Hazardous decomposition products	:	Thermal decomposition products: oxides of carbon.

11. Toxicological Information

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, OSHA or DFG.

Target Organs

ACETYLENE, : Central nervous system. DISSOLVED (74-86-2)

Additional Data

Stimulants such as epinephrine may induce ventricular fibrillation.

12. Ecological Information

No LOLI ecotoxicity data are available for this product's components.

13. Disposal Considerations

14. Transport Information

DOT (US only)

Proper shipping	:	Acetylene, dissolved
name		·
Class	:	2.1
UN/ID No.	:	UN1001
Labeling	:	Flammable Gas

15. Regulatory Information

U.S. Federal Regulations

None of this product's components are listed under SARA Section 302/304 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312

Acute: Yes Chronic: No Fire: Yes Reactive: Yes Pressure: Yes

U.S. State Regulations

The following components app	pear on one or	more of th	e following	state haza	rdous sub	stances list	s:
Component	CAS	CA	MA	MN	NJ	PA	RI
ACETYLENE, DISSOLVED	74-86-2	Yes	Yes	Yes	Yes	Yes	Yes

Not regulated under California Proposition 65

16. Other Information

Prepared by : Specialty Gases of America, Inc. For additional information, please visit our website at www.americangasgroup.com.

Material Safety Data Sheet



Acetylene

Section 1. Chemical product and company identification

Product name	: Acetylene
Supplier	: AIRGAS INC., on behalf of its subsidiaries 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
Product use	: Synthetic/Analytical chemistry.
Synonym	: Ethyne; Ethine; Narcylen; C2H2; Acetylen; UN 1001; Vinylene
MSDS #	: 001001
Date of Preparation/ Revision	: 4/7/2014.
In case of emergency	: 1-866-734-3438

Section 2. Hazards identification

Physical state	: Gas.
Emergency overview	: WARNING!
	FLAMMABLE GAS. MAY CAUSE FLASH FIRE. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. CONTENTS UNDER PRESSURE.
	Keep away from heat, sparks and flame. Do not puncture or incinerate container. Ma cause target organ damage, based on animal data. Use only with adequate ventilation Keep container closed.
	Contact with rapidly expanding gases can cause frostbite.
Target organs	: May cause damage to the following organs: lungs, upper respiratory tract, central nervous system (CNS).
Routes of entry	: Inhalation
Potential acute health effect	
Eyes	: Contact with rapidly expanding gas may cause burns or frostbite.
Skin	: Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	: Acts as a simple asphyxiant.
Ingestion	: Ingestion is not a normal route of exposure for gases
Potential chronic health eff	<u>.ts</u>
Chronic effects	: May cause target organ damage, based on animal data.
Target organs	: May cause damage to the following organs: lungs, upper respiratory tract, central nervous system (CNS).
Medical conditions aggravated by over- exposure	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.
See toxicological information	(Section 11)

Build 1.1

Section 3. Composition, Information on Ingredients

Name Acetylene **CAS number** 74-86-2 **% Volume** 100 Exposure limits NIOSH REL (United States, 1/2013). CEIL: 2662 mg/m³ CEIL: 2500 ppm

Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact	 Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Frostbite	: Try to warm up the frozen tissues and seek medical attention.
Inhalation	 Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	: As this product is a gas, refer to the inhalation section.

Section 5. Fire-fighting measures

: Flammable.
: 305°C (581°F)
: Closed cup: -18.15°C (-0.7°F).
: Lower: 2.5% Upper: 100%
: Decomposition products may include the following materials: carbon dioxide carbon monoxide
: Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials.
: In case of fire, use water spray (fog), foam or dry chemical.
In case of fire, allow gas to burn if flow cannot be shut off immediately. Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.
Contains gas under pressure. Flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions	:	Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.
Environmental precautions	:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for cleaning up	:	Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Handling	: Use only with adequate ventilation. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Keep container closed. Keep away from heat, sparks and flame. To avoid fire, eliminate ignition sources. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
Storage	: Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use Avoid all possible sources of ignition (spark or flame). Segregate

: Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Segregate from oxidizing materials. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Engineering controls	:	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Personal protection		
Eyes	:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
Skin	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
Respiratory	:	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
		The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93
Hands	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Personal protection in case of a large spill	:	Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.
Product name		
acetylene		NIOSH REL (United States, 1/2013). CEIL: 2662 mg/m ³

CEIL: 2500 ppm

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Molecular weight	: 26.04 g/mole
Molecular formula	: C2-H2
Melting/freezing point	: -81°C (-113.8°F)
Critical temperature	: 35.25°C (95.5°F)
Vapor pressure	: 635 (psig)
Vapor density	: 0.907 (Air = 1)
Specific Volume (ft ³ /lb)	: 14.7058
Gas Density (lb/ft ³)	: 0.0691

Section 10. Stability and reactivity

Stability and reactivity	: The product is stable.
Incompatibility with various substances	: Extremely reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Toxicity data	
Chronic effects on humans	: May cause damage to the following organs: lungs, upper respiratory tract, central nervous system (CNS).
Other toxic effects on humans Specific effects	: No specific information is available in our database regarding the other toxic effects of this material to humans.
Carcinogenic effects Mutagenic effects Reproduction toxicity	 No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Section 12. Ecological information

Aquatic ecotoxicity

Not available.	
Products of degradation	: Products of degradation: carbon oxides (CO, CO ₂) and water.
Environmental fate	: Not available.
Environmental hazards	: This product shows a low bioaccumulation potential.
Toxicity to the environment	: Not available.

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.Return cylinders with residual product to Airgas, Inc.Do not dispose of locally.

Section 14. Transport information

Acetylene						
Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1001	ACETYLENE, DISSOLVED	2.1	Not applicable (gas).	TANKAR CAR	Limited quantity Yes. Packaging instruction Passenger aircraft Quantity limitation: Forbidden. Cargo aircraft Quantity limitation: 15 kg
TDG Classification	UN1001	ACETYLENE, DISSOLVED	2.1	Not applicable (gas).		Explosive Limit and Limited Quantity Index 0 Passenger Carrying Ship Index 75 Passenger Carrying Road or Rail Index Forbidden Special provisions 38, 42
Mexico Classification	UN1001	ACETYLENE, DISSOLVED	2.1	Not applicable (gas).	PLAMMABLE GAS	-

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Section 15. Regulatory information

United States

U.S. Federal regulations	 TSCA 8(a) CDR Exempt/Partial exemption: Not determined United States inventory (TSCA 8b): This material is listed or exempted.
	SARA 302/304: No products were found. SARA 311/312 Hazards identification: Fire hazard, Sudden release of pressure, Delayed (chronic) health hazard
	Clean Air Act (CAA) 112 accidental release prevention - Flammable Substances:
	Acetylene

	Clean Air Act (CAA) 112 regulated flammable substances: acetylene
State regulations	: Connecticut Carcinogen Reporting: This material is not listed.
	Connecticut Hazardous Material Survey: This material is not listed.
	Florida substances: This material is not listed.
	Illinois Chemical Safety Act: This material is not listed.
	Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.
	Louisiana Reporting: This material is not listed.
	Louisiana Spill: This material is not listed.
	Massachusetts Spill: This material is not listed.
	Massachusetts Substances: This material is listed.
	Michigan Critical Material: This material is not listed.
	Minnesota Hazardous Substances: This material is not listed.
	New Jersey Hazardous Substances: This material is listed.
	New Jersey Spill: This material is not listed.
	New Jersey Toxic Catastrophe Prevention Act: This material is not listed.
	New York Acutely Hazardous Substances: This material is not listed.
	New York Toxic Chemical Release Reporting: This material is not listed.
	Pennsylvania RTK Hazardous Substances: This material is listed.
	Rhode Island Hazardous Substances: This material is not listed.
<u>Canada</u>	
WHMIS (Canada)	: Class A: Compressed gas.
	Class B-1: Flammable gas.
	Class F: Dangerously reactive material.
	CEPA Toxic substances: This material is not listed.
	Canadian ARET: This material is not listed.
	Canadian NPRI: This material is listed.
	Alberta Designated Substances: This material is not listed.
	Ontario Designated Substances: This material is not listed.
	Quebec Designated Substances: This material is not listed.

Section 16. Other information

United States		
Label requirements	: FLAMMABLE GAS. MAY CAUSE FLASH FIRE. MAY CAUSE TARGET OR CONTENTS UNDER PRES	GAN DAMAGE, BASED ON ANIMAL DATA. SURE.
Canada		
Label requirements	: Class A: Compressed gas. Class B-1: Flammable gas. Class F: Dangerously reacti	ve material.
Hazardous Material Information System (U.S.A.)	• Health	1
	Flammability	4
	Physical hazards	2
National Fire Protection Association (U.S.A.)	: Health	Flammability Instability Special

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Aervoe Survey Marking Paint - Bulk



TO: MSDS USERS

Please find below the material safety data sheet as per your request.

The information presented in these forms is believed to be correct and sufficient to meet the requirements of OSHA Hazard Communication standard (29 CFR 1910.1200) concerning worker's right to know. In order for the information contained in the MSDS to be most helpful we recommend that these forms be made available to all those who handle or may otherwise be exposed to the product.

This MSDS covers the following Aervoe bulk product.

PRODUCT NAME: Aervoe Survey Marking Paint:

207 White 208 HI Vis Yellow

SECTION I - MANUFACTURER IDENTIFICATION

MANUFACTURER'S NAME: Aervoe Industries Inc. INFORMATION PHONE: 775-783-3100 DATE REVISED: January 18, 2012 ADDRESS: 1100 Mark Circle, Gardnerville, NV 89410 EMERGENCY PHONE: 1-800-424-9300 REASON REVISED: Updated

SECTION II - HAZARDOUS INGREDIENTS / SARA III INFORMATION OCCUPATIONAL EXPOSURE LIMITS

HAZARDOUS COMPONENTS	WEIGHT PERCENT	OSHA PEL	ACGIH TLV	OTHER	LD50 SPECIES & ROUTE	LC50 SPECIES & ROUTE	
n-Butyl Acetate (CAS 123-86-4)	10 - 30	150 ppm	150 ppm		N / AV	N / AV	
Aliphatic Hydrocarbon (CAS 8052-41-3)	3 - 7	500 ppm	100 ppm		N / AV	N / AV	
*Glycol Ether EB Aceta (CAS 112-07-2)	te 1 - 5	N / AV	N / AV		N / AV	N / AV	

SECTION III - PHYSICAL / CHEMICAL CHARACTERISTICS

BOILING POINT: 149° to 289° F (65° to 14	2.8° C) SPECIFI	C GRAVITY (H20=1): 1.1	COEFFICIENT OF WATER/OIL	DIST: N/A
ODOR THRESHOLD: N/A	VAPOR	DENSITY: Heavier than air	SOLUBILITY IN WATER: Negli	igible
EVAPORATION RATE: Slower than n-Buty	Acetate	APPEARANCE AND ODOR	: Opaque Liquid / Solvent Based	Ödor
COATING V.O.C. : 6.24 lbs / Imp gal 5.	2 lbs / US gal	523 gms / ltr	FREEZING POINT: N/A	pH: N/A

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

 FLASH POINT: 59° to 74° F (15° to 23.3° C)
 METHOD USED: Estimated

 FLAMMABLE LIMITS IN AIR BY VOLUME - LOWER: .7%
 UPPER: 7.0%

 EXTINGUISHING MEDIA: Foam, Alcohol Foam, CO2, Dry Chemical, Water Fog
 Dry Chemical, Water Fog

 SPECIAL FIRE FIGHTING PROCEDURES: Water spray may be ineffective, but water spray may be used to cool containers exposed to heat or fire to prevent pressure build up. Self-contained breathing apparatus should be used if product is involved in fire.

 UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers may rupture due to pressure build up from extreme heat or fire.

 FLAMMABILITY: Yes - Flammable liquid under conditions of sparks, flame, or hot surfaces.

 SENSITIVITY TO IMPACT: Do not puncture

SECTION V - REACTIVITY DATA

STABILITY: Stable CONDITIONS TO AVOID: High temperatures INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizing agents HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Carbon Monoxide and Carbon Dioxide HAZARDOUS POLYMERIZATION: Will not occur

SECTION VI - HEALTH HAZARD DATA

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: May cause dizziness or nausea. SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE: SKIN - May cause irritation or burning sensation. EYES - Primary irritation.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: May cause irritation or burning sensation. INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: N/A

HEALTH HAZARDS (ACUTE AND CHRONIC): INHALATION - Anesthetic. Irritation of the respiratory tract, or nervous system depression (characterized by headache, dizziness, nausea or possible unconsciousness). SKIN OR EYE CONTACT - Primary irritation. Prolonged or repeated contact to skin may cause dermatitis - exercise due care.

 CARCINOGENICITY: None known
 NTP? No
 IARC MONOGRAPHS? No
 OSHA REGULATED? No

 TERATOGENICITY: N/A
 MUTAGENICITY: N/A
 TOXICOLOGICALLY SYNERGISTIC PRODUCT: N/A

 MEDICAL CONDITION GENERALLY AGGRAVATED BY EXPOSURE: None known
 None known

EMERGENCY AND FIRST AID PROCEDURES: VAPORS - Remove from exposure and restore breathing, seek medical attention. SPLASH - (SKIN) Wash affected area, remove contaminated clothing, see physician if any irritation persists. SPLASH - (EYES) Flush immediately with water for 15 minutes and take to a physician.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Remove all sources of ignition - Flames, sparks, static electricity & electrical. Ventilate area, avoid run off into sewer by diking, and soak up with inert absorbent using non-sparking type tools. WASTE DISPOSAL METHOD: Dispose of in accordance with local, state and federal regulations. Do not incinerate closed containers. PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Do not store above 120° F (49° C). Do not store or use near heat, sparks or flame. OTHER PRECAUTIONS: Do not get in eyes. Do not breathe vapors. Avoid skin contact. Do not take internally. Smoking while using this product must be strictly prohibited. In addition to all other hazards and precautions - dust from sanding the dry paint films should be treated as a nuisance dust with a TLV of 10mg/cubic meter.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION: Outdoors - Recommend an approved mechanical particulate filter to remove any airborne overspray. In restricted areas with poor ventilation, use a NIOSH approved Organic Cartridge Respirator. For concentrations above the exposure limit, use a positive air supplied respirator.

VENTILATION: All application areas should be adequately ventilated in order to keep the items in SECTION II below their exposure limits. PROTECTIVE GLOVES: Impervious gloves (natural rubber) are recommended to prevent skin contact.

EYE PROTECTION: Safety glasses with side shields are recommended to prevent eye contact.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Impervious apron (natural rubber) is recommended to prevent skin contact. Eye wash fountain and safety shower.

WORK / HYGIENIC PRACTICES: Avoid prolonged or repeated contact. Do not breathe vapors. Wash contaminated clothing prior to reuse.

SECTION IX - DISCLAIMER

THE INFORMATION CONTAINED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE SO. NOTHING CONTAINED HEREIN CONSTITUTES A SPECIFICATION NOR IS IT INTENDED TO WARRANT SUITABILITY FOR THE INTENDED USE.

17B

Aervoe Survey Marking Paint - Bulk



TO: MSDS USERS

Please find below the material safety data sheet as per your request

The information presented in these forms is believed to be correct and sufficient to meet the requirements of OSHA Hazard Communication standard (29 CFR 1910.1200) concerning worker's right to know. In order for the information contained in the MSDS to be most helpful we recommend that these forms be made available to all those who handle or may otherwise be exposed to the product.

This MSDS covers the following Aervoe bulk product.

PRODUCT NAME: Aervoe Survey Marking Paint

Fluorescent Colors 220 Red 222 Orange 227 Blue 229 Pink 230 Red/Orange

SECTION I - MANUFACTURER IDENTIFICATION

MANUFACTURER'S NAME: Aervoe Industries Industries
INFORMATION PHONE: 775-783-3100
DATE REVISED: January 18, 2012

ADDRESS: 1100 Mark Circle, Gardnerville, NV 89410 EMERGENCY PHONE: 1-800-424-9300 **REASON REVISED: Updated**

SECTION II - HAZARDOUS INGREDIENTS / SARA III INFORMATION OCCUPATIONAL EXPOSURE LIMITS

HAZARDOUS COMPONENTS	WEIGHT PERCENT	OSHA PEL	ACGIH TLV	OTHER	LD50 SPECIES & ROUTE	LC50 SPECIES & ROUTE	
Aliphatic Petroleum Dis	tillates	N / AV	300 ppm		N / AV	N / AV	
(CAS 64742-89-8)	15 - 40						
Aliphatic Hydrocarbon		300 ppm	300 ppm		N / AV	N / AV	
(CAS 8032-32-4)	5 - 10						
*Glycol Ether EB Aceta	te	N / AV	N / AV		N / AV	N / AV	
(CAS 112-07-2)	1 - 5						

*Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

NOTE: N/A applies to not available or not applicable

SECTION III - PHYSICAL / CHEMICAL CHARACTERISTICS

BOILING POINT: 185° F SPECIFIC GRAVITY (H20=1): 1.2 COEFFICIENT OF WATER/OIL DIST: N/A ODOR THRESHOLD: N/A VAPOR DENSITY: Heavier than air SOLUBILITY IN WATER: Negligible **EVAPORATION RATE:** Slower than n-Butyl Acetate APPEARANCE AND ODOR: Opague Liquid / Solvent Based Odor FREEZING POINT: N/A pH: N/A

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 50° F (10° C) METHOD USED: Estimated FLAMMABLE LIMITS IN AIR BY VOLUME - LOWER: 1.3% UPPER: 8.0% EXTINGUISHING MEDIA: Foam, Alcohol Foam, CO., Dry Chemical, Water Fog SPECIAL FIRE FIGHTING PROCEDURES: Water spray may be ineffective, but water spray may be used to cool containers exposed to heat or fire to prevent pressure build up. Self-contained breathing apparatus should be used if product is involved in fire. UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers may rupture due to pressure build up from extreme heat or fire. FLAMMABILITY: Yes - Flammable liquid under conditions of sparks, flame, or hot surfaces. SENSITIVITY TO IMPACT: Do not puncture SENSITIVITY TO STATIC DISCHARGE: Primarily vapors

SECTION V - REACTIVITY DATA

STABILITY: Stable **CONDITIONS TO AVOID: High temperatures INCOMPATIBILITY (MATERIALS TO AVOID):** Strong oxidizing agents HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Carbon Monoxide and Carbon Dioxide HAZARDOUS POLYMERIZATION: Will not occur

SECTION VI - HEALTH HAZARD DATA

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: May cause dizziness or nausea. SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE: SKIN - May cause irritation or burning sensation. EYES - Primary irritation.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: May cause irritation or burning sensation. INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: N/A

HEALTH HAZARDS (ACUTE AND CHRONIC): INHALATION - Anesthetic. Irritation of the respiratory tract, or nervous system depression (characterized by headache, dizziness, nausea or possible unconsciousness). SKIN OR EYE CONTACT - Primary irritation. Prolonged or repeated contact to skin may cause dermatitis - exercise due care.

CARCINOGENICITY: None known NTP? No IARC MONOGRAPHS? No **TERATOGENICITY: N/A** MUTAGENICITY: N/A

TOXICOLOGICALLY SYNERGISTIC PRODUCT: N/A

OSHA REGULATED? No

MEDICAL CONDITION GENERALLY AGGRAVATED BY EXPOSURE: None known

EMERGENCY AND FIRST AID PROCEDURES: VAPORS - Remove from exposure and restore breathing, seek medical attention. SPLASH - (SKIN) Wash affected area, remove contaminated clothing, see physician if any irritation persists.

SPLASH - (EYES) Flush immediately with water for 15 minutes and take to a physician.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Remove all sources of ignition - Flames, sparks, static electricity & electrical. Ventilate area, avoid run off into sewer by diking, and soak up with inert absorbent using non-sparking type tools. WASTE DISPOSAL METHOD: Dispose of in accordance with local, state and federal regulations. Do not incinerate closed containers. PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Do not store above 120° F (49° C). Do not store or use near heat, sparks or flame. OTHER PRECAUTIONS: Do not get in eyes. Do not breathe vapors. Avoid skin contact. Do not take internally. Smoking while using this product must be strictly prohibited. In addition to all other hazards and precautions - dust from sanding the dry paint films should be treated as a nuisance dust with a TLV of 10mg/cubic meter.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION: Outdoors - Recommend an approved mechanical particulate filter to remove any airborne overspray. In restricted areas with poor ventilation, use a NIOSH approved Organic Cartridge Respirator. For concentrations above the exposure limit, use a positive air supplied respirator.

VENTILATION: All application areas should be adequately ventilated in order to keep the items in SECTION II below their exposure limits. PROTECTIVE GLOVES: Impervious gloves (natural rubber) are recommended to prevent skin contact.

EYE PROTECTION: Safety glasses with side shields are recommended to prevent eye contact.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Impervious apron (natural rubber) is recommended to prevent skin contact. Eye wash fountain and safety shower.

WORK / HYGIENIC PRACTICES: Avoid prolonged or repeated contact. Do not breathe vapors. Wash contaminated clothing prior to reuse.

SECTION IX - DISCLAIMER

THE INFORMATION CONTAINED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE SO. NOTHING CONTAINED HEREIN CONSTITUTES A SPECIFICATION NOR IS IT INTENDED TO WARRANT SUITABILITY FOR THE INTENDED USE.

CRC MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification

Product Name: Air Brake Anti-Freeze & Conditioner

Product Number (s): 05528, 05532, 05555, 75528, 75532

Product Use: Air brake anti-freeze

Manufacturer / Supplier Contact Information:

In United States: CRC Industries, Inc. 885 Louis Drive Warminster, PA 18974 <u>www.crcindustries.com</u> 1-215-674-4300(General) (800) 521-3168 (Technical) (800) 272-4620 (Customer Service) In Canada: CRC Canada Co. 2-1246 Lorimar Drive Mississauga, Ontario L5S 1R2 <u>www.crc-canada.ca</u> 1-905-670-2291 In Mexico: CRC Industries Mexico Av. Benito Juárez 4055 G Colonia Orquídea San Luís Potosí, SLP CP 78394 www.crc-mexico.com 52-444-824-1666

24-Hr Emergency - CHEMTREC: (800) 424-9300 or (703) 527-3887

Section 2: Hazards Identification

Emergency Overview

DANGER: Poison. May be Fatal or Cause Blindness if Swallowed. Flammable. Vapor Harmful. Appearance & Odor: Colorless liquid, characteristic pungent odor

Potential Health Effects:

ACUTE EFFECTS:

EYE: May cause mild irritation. Symptoms include stinging, tearing, and redness.

- SKIN: May cause mild skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, drying and cracking of skin, and skin burns. Passage of this material into the body through the skin is possible, and may add to toxic effects from breathing or swallowing.
- INHALATION: Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful, and may cause irritation of airways, dizziness, drowsiness, nausea, and vomiting.
- INGESTION: Swallowing this material may be harmful. Symptoms may include nausea, vomiting, dizziness, leg cramps, pain in the abdomen or lower back, blurred vision, shortness of breath, visual impairment (including blindness), coma, and death.
- CHRONIC EFFECTS: Overexposure to this material may cause liver abnormalities, central nervous system damage, and visual impairment.
- TARGET ORGANS: Liver, kidneys, pancreas, heart, lungs, and brain

Medical Conditions Aggravated by Exposure: Preexisting disorders of the following organs: Skin, lung, liver, kidney, central nervous system, pancreas, and heart.

See Section 11 for toxicology and carcinogenicity information on product ingredients.

Section 3: Composition/Information on Ingredients

COMPONENT	CAS NUMBER	% by Wt.
Methanol	67-56-1	> 99
Oxazoline additive	Proprietary	< 1

Section 4: First Aid Measures

Eye Contact:	Immediately flush with plenty of water for 15 minutes. Call a physician if irritation persists.
Skin Contact:	Remove contaminated clothing and wash affected area with soap and water. Call a physician if irritation persists. Wash contaminated clothing prior to re-use.
Inhalation:	Remove person to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call a physician.
Ingestion:	Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.
Note to Physicians:	Methanol is metabolized to formic acid and formaldehyde. These metabolites can cause metabolic acidosis, visual disturbances and blindness. Since metabolism is required for these toxic symptoms, their onset may be delayed from 6 to 30 hours following ingestion. Ethanol competes for the same metabolic pathway and has been used to prevent methanol metabolism. Ethanol administration is indicated in symptomatic patients or at blood methanol concentrations above 20 ug/dl. Methanol is effectively removed by hemodialysis. Fomepizole (4-methylpyrazole) is an effective antagonist of alcohol dehydrogenase, and may be used as an antidote in the treatment of methanol poisoning.

Section 5: Fire-Fighting Measures

	s defined by OSHA, this produ 54°F / 12°C (TCC) 725°E / 385°C		36			
Fire and Explosion Data:	723 1 7 303 0		1.5			
Suitable Extinguishing Media:	Dry chemical, alcohol-resis	tant foam, carbon dioxide	(CO2)			
Products of Combustion: Carbon dioxide and carbon monoxide.						
Explosion Hazards: Col	Explosion Hazards: Containers, when exposed to heat from fire, may build pressure and rupture.					
		and possible toxic deconvided. Use water spray to	nposition products. Proper eye and b keep fire-exposed containers cool			

Section 6: Accidental Release Measures

Product Name: Air Brake Anti-Freeze & Conditioner Product Number (s): 05528, 05532, 05555, 75528, 75532

Personal Precautions: Use personal protection recommended in Section 8.
Environmental Precautions: Take precautions to prevent contamination of ground and surface waters. Do not flush into sewers or storm drains. If run-off occurs, notify the proper authorities as required, that a spill has occurred.
Methods for Containment & Clean-up: Eliminate all ignition sources. Dike area to contain spill. Ventilate the area with fresh air. If in confined space or limited air circulation area, clean-up workers should wear appropriate respiratory protection. Recover or absorb spilled material using an absorbent designed for chemical spills. Place used absorbents into proper waste containers.

Section 7: Handling and Storage

Handling Procedures:	Avoid contact with skin and eyes. Do not use near sources of ignition or energized equipment. Static ignition hazard can result from handling and use. Electrically bond and ground all containers and equipment before transfer or use of material. For product use instructions, please see the product label.
Storage Procedures:	Store in a cool dry area out of direct sunlight. Keep containers closed when not in use. Keep out of reach of children and pets.
Aerosol Storage Level:	NA

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines:

	OS	SHA	AC	GIH	0	THER	
COMPONENT	TWA	STEL	TWA	STEL	TWA	SOURCE	UNIT
Methanol	200	NE	200 (s)	250 (s)	NE		ppm
Oxazoline additive	25	NE	10	NE	NE		ppm
N.E. – Not Established (c) – ceiling (s) – skin (v) – vacated							

Controls and Protection:

Engineering Controls: Area should have ventilation to provide fresh air. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at the source, preventing dispersion into the general work area. Use mechanical means if necessary to maintain vapor levels below the exposure guidelines. If working in a confined space, follow applicable OSHA regulations. None required for normal work where adequate ventilation is provided. If engineering controls **Respiratory Protection:** are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with organic vapor cartridge. Air monitoring is needed to determine actual employee exposure levels. Use a self-contained breathing apparatus in confined spaces and for emergencies. Eye/face Protection: For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear splash-proof goggles. Skin Protection: Use protective gloves such as nitrile or natural rubber. Also, use full protective clothing if there is prolonged or repeated contact of liquid with skin.

Section 9: Physical and Chemical Properties

Product Name: Air Brake Anti-Freeze & Conditioner Product Number (s): 05528, 05532, 05555, 75528, 75532

Physical State: liq	luid						
Color: colorless							
Odor: character	ristic pungent o	dor					
Odor Threshold:	ND						
Specific Gravity:	0.792						
Initial Boiling Point:	148°F / 64°C						
Freezing Point:	ND						
Vapor Pressure:	16.93 kPa @	77°F / 25	С				
Vapor Density:	1.1	(air = 1)					
Evaporation Rate:	fast						
Solubility: compl	etely soluble in	water					
Coefficient of water/o	oil distribution:	ND					
pH: NA							
Volatile Organic Con	npounds: <u>w</u>	<u>t %</u> : 100	C	<u>g/L</u> :	792	<u>lbs./gal:</u>	6.6

Section 10: Stability and Reactivity

Stability:	Stable		
Conditions to	Avoid:	Sources of i	gnition.
Incompatible I	Materials:		es, peroxides, reactive metals such as aluminum and magnesium, sodium, strong g bases, strong oxidizing agents, zinc
Hazardous De	ecompositio	n Products:	Carbon dioxide and carbon monoxide
Possibility of H	Hazardous F	Reactions:	No

Section 11: Toxicological Information

Long-term toxicological studies have not been conducted for this product. The following information is available for components of this product.

Acute Toxicity:

<u>Component</u>	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Methanol	5628 mg/kg	15,800 mg/kg	64,000 ppm/4H
Oxazoline additive	725 mg/kg	> 2000 mg/kg	400 ppm/6H

Chronic Toxicity:

	OSHA	IARC	NTP		
<u>Component</u>	<u>Carcinogen</u>	<u>Carcinogen</u>	<u>Carcinogen</u>	<u>Irritant</u>	<u>Sensitizer</u>
Methanol	No	No	No	eye, skin	Unknown
Oxazoline additive	No	No	No	No	No

Reproductive Toxicity:	No information available
Teratogenicity:	Methanol has produced fetotoxicity in rats and teratogenicity in mice exposed by
	inhalation to high concentrations of methanol vapors.
Mutagenicity:	No information available
Synergistic Effects:	High concentrations of methanol can increase the toxicity of other chemicals,
	particularly liver toxins.

Section 12: Ecological Information

Ecological studies have not been conducted for this product. The following information is available for components of this product.

Ecotoxicity:	No information available			
Persistence / Degradability:		No information available		
Bioaccumulation / Accumulation:		No information available		
Mobility in Environ	ment:	No information available		

Section 13: Disposal Considerations

<u>Waste Classification</u>: This product is a RCRA hazardous waste for the characteristic of ignitability with the following potential waste codes: D001, F003, U154. (See 40 CFR Part 261.20 – 261.33) Empty containers may be recycled.

All disposal activities must comply with federal, state, provincial and local regulations. Local regulations may be more stringent than state, provincial or national requirements.

Section 14: Transport Information

US DOT (ground):	05532, 75532 05528, 05555, 75528	UN1230, Methanol, 3, PGII, Limited Quantity** UN1230, Methanol, 3, PG II
ICAO/IATA (air):	(All Part #'s)	UN1230, Methanol, 3 (6.1), PG II
IMO/IMDG (water):	(All part #'s)	UN1230, Methanol, 3 (6.1), PG II
Special Provisions:	ground shipping until Ja	classified and labeled as 'Consumer Commodity, ORM-D' for domestic anuary 1, 2014. Jantity by ground, note that shipping papers are not required.

Section 15: Regulatory Information

U.S. Federal Regulations:

Toxic Substances Control Act (TSCA):

All ingredients are either listed on the TSCA inventory or are exempt.

<u>Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)</u>: Reportable Quantities (RQ's) exist for the following ingredients: Methanol (5000 lbs)

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Superfund Amendments Reauthorization Act (SARA) Title III: Section 302 Extremely Hazardous Substances (EHS): None

Section 311/312 Hazard Categories:	Fire Hazard	Yes
	Reactive Hazard	No
	Release of Pressure	No
	Acute Health Hazard	Yes
	Chronic Health Hazard	No

Product Name: Air Brake Anti-Freeze & Conditioner Product Number (s): 05528, 05532, 05555, 75528, 75532

Section 313 Toxic Chemicals:

 This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372: Methanol (> 99%)

None

Clean Air Act:

Section 112 Hazardous Air Pollutants (HAPs): Methanol

Occupational Safety and Health Administration:

This product is regulated by the Hazard Communications Standard.

U.S. State Regulations:

<u>California Safe Drinking Water and Toxic Enforcement Act (Prop 65)</u>: This product may contain the following chemicals known to the state of

California to cause cancer, birth defects or other reproductive harm:

<u>Consumer Products VOC Regulations</u>: This product is not regulated.

State Right to Know:

 New Jersey:
 67-56-1

 Pennsylvania:
 67-56-1

 Massachusetts:
 67-56-1

 Rhode Island :
 67-56-1

Canadian Regulations:

Controlled Products Regulations:

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulation and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Hazard Class: B2, D1B, D2A, D2B

Canadian DSL Inventory: All ingredients are either listed on the DSL Inventory or are exempt.

European Union Regulations:

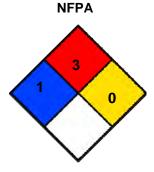
<u>RoHS Compliance</u>: This product is compliant with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003. This product does not contain any of the restricted substances as listed in Article 4(1) of the RoHS Directive.

Additional Regulatory Information: None

Section 16: Other Information

HMIS® (II)					
Health:	1				
Flammability:	3				
Reactivity:	0				
PPE:	В				

Ratings range from 0 (no hazard) to 4 (severe hazard)



Product Name: Air Brake Anti-Freeze & Conditioner Product Number (s): 05528, 05532, 05555, 75528, 75532

Prepared By:Michelle RudnickCRC #:620BRevision Date:11/16/2012

Changes since last revision: Section 11: Toxicological Information Section 14: Transport Information

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this MSDS consult your supervisor, a health & safety professional, or CRC Industries.

- ACGIH: American Conference of Governmental Industrial Hygienists
- CAS: Chemical Abstract Service
- CFR: Code of Federal Regulations
- DOT: Department of Transportation
- DSL: Domestic Substance List
- g/L: grams per Liter
- HMIS: Hazardous Materials Identification System
- IARC: International Agency for Research on Cancer
- IATA: International Air Transport Association
- ICAO: International Civil Aviation Organization
- IMDG: International Maritime Dangerous Goods
- IMO: International Maritime Organization
- lbs./gal: pounds per gallon
- LC: Lethal Concentration
- LD: Lethal Dose

NA: Not Applicable ND: Not Determined NIOSH: National Institute of Occupational Safety & Health NFPA: National Fire Protection Association NTP: National Toxicology Program OSHA: Occupational Safety and Health Administration PMCC: Pensky-Martens Closed Cup Personal Protection Equipment PPE: Parts per Million ppm: RoHS: Restriction of Hazardous Substances STEL: Short Term Exposure Limit Tag Closed Cup TCC: Time Weighted Average TWA: WHMIS: Workplace Hazardous Materials Information System

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Chevron Material Safety Data Sheet DISCONTINUED - See Section 16.

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHEVRON American Industrial Oil

PRODUCT NUMBER(S): CPS230323 CPS230324 CPS230325 CPS230326 CPS230327 CPS230328 CPS231025 CPS253000 SYNONYM: CHEVRON American Industrial Oil ISO 100 CHEVRON American Industrial Oil ISO 150 CHEVRON American Industrial Oil ISO 22 CHEVRON American Industrial Oil ISO 220 CHEVRON American Industrial Oil ISO 32 CHEVRON American Industrial Oil ISO 46 CHEVRON American Industrial Oil ISO 68 CHEVRON American Industrial Oil 115 CHEVRON Machine Oil R&O ISO 100 CHEVRON Machine Oil R&O ISO 150 CHEVRON Machine Oil R&O ISO 22 CHEVRON Machine Oil R&O ISO 32 CHEVRON Machine Oil R&O ISO 46 CHEVRON Machine Oil R&O ISO 68 CHEVRON Machine Oil R&O 115 COMPANY IDENTIFICATION EMERGENCY TELEPHONE NUMBERS ChevronTexaco Global Lubricants HEALTH (24 hr): (800)231-0623 or 6001 Bollinger Canyon Rd

San Ramon, CA 94583 www.chevron-lubricants.com HEALTH (24 hr): (800)231-0623 or (510)231-0623 (International) TRANSPORTATION (24 hr): CHEMTREC (800)424-9300 or (703)527-3887 Emergency Information Centers are located in U.S.A. Int'l collect calls accepted

PRODUCT INFORMATION: MSDS Request: (800)414-6737 email: lubemsds@chevrontexaco.com Product Information: (800)LUBE-TEK

2. COMPOSITION/INFORMATION ON INGREDIENTS

100.0 % CHEVRON American Industrial Oil

Revision Number: 2 Revision Date: 02/06/02 MSDS Number: 006964

CONTAINING

COMPONENTS		AMOUNT	LIMIT/QTY	AGENCY/TYPE
LUBRICATING BASE SEVERELY REFINED	PETROLEUM	DISTILLATE 98.00%	10 mg/m3 (mist)	ACGIH TWA ACGIH STEL OSHA PEL

The BASE OIL may be a mixture of any of the following: CAS 64741884, CAS 64741895, CAS 64741964, CAS 64741975, CAS 64742014, CAS 64742525, CAS 64742536, CAS 64742547, CAS 64742558, CAS 64742570, CAS 64742627, CAS 64742650, or CAS 72623837.

ADDITIVES

< 2.00%

COMPOSITION COMMENT:

All the components of this material are on the Toxic Substances Control Act Chemical Substances Inventory.

This product fits the ACGIH definition for mineral oil mist. The ACGIH TLV is 5 mg/m3, the OSHA PEL is 5 mg/m3.

3. HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

EYE:

Not expected to cause prolonged or significant eye irritation. **SKIN**:

Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

INGESTION:

Not expected to be harmful if swallowed.

INHALATION:

Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit.

Revision Number: 2 Revision Date: 02/06/02 MSDS Number: 006964

4. FIRST AID MEASURES

EYE:

No specific first aid measures are required because this material is not expected to cause eye irritation. As a precaution remove contact lenses, if worn, and flush eyes with water.

SKIN:

No specific first aid measures are required because this material is not expected to be harmful if it contacts the skin. As a precaution, remove clothing and shoes if contaminated. Use a waterless hand cleaner, mineral oil, or petroleum jelly to remove the material. Then wash skin with soap and water. Wash or clean contaminated clothing and shoes before reuse. INGESTION:

No specific first aid measures are required because this material is not expected to be harmful if swallowed. Do not induce vomiting. As a precaution, give the person a glass of water or milk to drink and get medical advice. Never give anything by mouth to an unconscious person.

INHALATION:

If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

NOTE TO PHYSICIANS:

In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

5. FIRE FIGHTING MEASURES

SPECIAL NOTES: Leaks/ruptures in high pressure systems using materials of this type can create a fire hazard when in the vicinity of ignition sources (eq. open flame, pilot lights, sparks, or electric arcs).

FIRE CLASSIFICATION:

Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

FLAMMABLE PROPERTIES:

FLASH POINT: (COC) 349-500F (176-260C) Min. AUTOIGNITION: NDA FLAMMABILITY LIMITS (% by volume in air): Lower: NA Upper: NA EXTINGUISHING MEDIA: CO2, Dry Chemical, Foam, Water Fog NFPA RATINGS: Health 0; Flammability 1; Reactivity 0.

FIRE FIGHTING INSTRUCTIONS:

This material will burn although it is not easily ignited.

COMBUSTION PRODUCTS:

Normal combustion forms carbon dioxide and water vapor; incomplete combustion can produce carbon monoxide.

Revision Number: 2

Revision Date: 02/06/02 MSDS Number: 006964

6. ACCIDENTAL RELEASE MEASURES

CHEMTREC EMERGENCY NUMBER (24 hr): (800)424-9300 or (703)527-3887 International Collect Calls Accepted ACCIDENTAL RELEASE MEASURES:

Stop the source of the leak or release. Clean up releases as soon as possible, observing precautions in Exposure Controls/Personal Protection. Contain liquid to prevent further contamination of soil, surface water or groundwater. Clean up small spills using appropriate techniques such as sorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Follow prescribed procedures for reporting and responding to larger releases.

7. HANDLING AND STORAGE

DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner, or properly disposed of. Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS

Use in a well-ventilated area. If user operations generate an oil mist, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended mineral oil mist exposure limits.

Revision Number: 2 Revision Date: 02/06/02 MSDS Number: 006964

PERSONAL PROTECTIVE EQUIPMENT EYE/FACE PROTECTION:

No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice. **SKIN PROTECTION**:

No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances. Suggested materials for protective gloves include: <Nitrile> <Silver Shield> <Viton>

RESPIRATORY PROTECTION:

No respiratory protection is normally required. If user operations generate an oil mist, determine if airborne concentrations are below the recommended mineral oil mist exposure limits. If not wear a NIOSH approved respirator that provides adequate protection from measured concentrations of this material. Use the following elements for air-purifying respirators: particulate.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Clear, colorless liquid. NDA :Hq VAPOR PRESSURE: NA VAPOR DENSITY (AIR=1): NA BOILING POINT: NDA NDA FREEZING POINT: MELTING POINT: NA Soluble in hydrocarbon solvents; insoluble in water. SOLUBILITY: SPECIFIC GRAVITY: 0.86 - 0.87 @ 15.6/15.6C VOLATILE ORGANIC COMPOUNDS (VOC): 1.8 (wt%); 14.94 g/l approx. EVAPORATION RATE: NA 22 - 210 cSt @ 40C (Min.) VISCOSITY: PERCENT VOLATILE (VOL): NA

10. STABILITY AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS: No data available. CHEMICAL STABILITY: Stable. CONDITIONS TO AVOID: No data available. INCOMPATIBILITY WITH OTHER MATERIALS: May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. HAZARDOUS POLYMERIZATION: Polymerization will not occur.

Revision Number: 2

Revision Date: 02/06/02

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: The eye irritation hazard is based on data for a similar material. SKIN EFFECTS: The skin irritation hazard is based on data for a similar material. ACUTE ORAL EFFECTS: The acute oral toxicity is based on data for a similar material. ACUTE INHALATION EFFECTS: The acute respiratory toxicity is based on data for a similar material. ADDITIONAL TOXICOLOGY INFORMATION: This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

12. ECOLOGICAL INFORMATION

ECOTOXICITY:

This material is not expected to be harmful to aquatic organisms. ENVIRONMENTAL FATE: This material is not expected to be readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

14. TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT SHIPPING NAME: NONE DOT HAZARD CLASS: NONE

Revision Number: 2 Revision Date: 02/06/02 MSDS Number: 006964

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DOT IDENTIFICATION NUMBER: NONE DOT PACKING GROUP: N/A ADDITIONAL INFO: Petroleum Lubricating Oil - Not Hazardous by U.S. DOT. ADR/RID Hazard class - Not applicable.

15. REGULATORY INFORMATION

	 Immediate (Acute) He Delayed (Chronic) Hea Fire Hazard: Sudden Release of Pre Reactivity Hazard: 	lth Effects: NO NO
REGULATORY LISTS SEARCHE	D:	
01=SARA 313 02=MASS RTK 03=NTP Carcinogen 04=CA Prop 65-Carcin 05=CA Prop 65-Repro Tox	14=ACGIH TWA	22=TSCA Sect 5(a)(2) 23=TSCA Sect 6 24=TSCA Sect 12(b) 25=TSCA Sect 8(a) 26=TSCA Sect 8(d)

of our reop of ourorn	TI HOOTH TOUL	20 10011 0000 0(a)
05=CA Prop 65-Repro Tox	15=ACGIH STEL	26=TSCA Sect 8(d)
06=IARC Group 1	16=ACGIH Calc TLV	27=TSCA Sect 4(a)
07=IARC Group 2A	17=OSHA PEL	28=Canadian WHMIS
08=IARC Group 2B	18=DOT Marine Pollutant	29=OSHA CEILING
09=SARA 302/304	19=Chevron TWA	30=Chevron STEL
10=PA RTK	20=EPA Carcinogen	31=OSHA STEL

The following components of this material are found on the regulatory lists indicated.

SEVERELY REFINED PETROLEUM DISTILLATE is found on lists: 14,15,17,

EU RISK AND SAFETY LABEL PHRASES:

May cause long-term adverse effects in the aquatic environment. NEW JERSEY RTK CLASSIFICATION: Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

16. OTHER INFORMATION

NFPA RATINGS: Health 0; Flammability 1; Reactivity 0; HMIS RATINGS: Health 1; Flammability 1; Reactivity 0; (O-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the quidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association

Revision Number: 2 Revision Date: 02/06/02

MSDS Number: 006964

(for HMIS ratings).

REVISION STATEMENT:

PRODUCTS DISCONTINUED. This Material Safety Data Sheet will no longer be updated.

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Toxicology and Health Risk Assessment Unit, CRTC, P.O. Box 1627, Richmond, CA 94804

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

THIS IS THE LAST PAGE OF THIS MSDS ITW Permatex 10 Columbus Blvd. Hartford, CT 06106 USA Telephone: 1-87-Permatex (877) 376-2839 Emergency: 800-255-3924 (ChemTel) International Emergency: 00+ 1+ 813-248-0585

Material Safety Data Sheet

1. PRODUCT IDENTIFICATION		
Product Name:	ANAEROBIC GASKET MAKER 6ML	
Item No:	51817	
Product Type:	Anaerobic	

2. COMPOSITION/INFORMATION ON INGREDIENTS			
Component	Weight%	ACGIH; TLV-TWA	OSHA PEL
POLYURETHANE METHACRYLATE RESIN (MIXTURE)	50-70	Not listed	Not listed
POLYGLYCOL DIMETHACRYLATE 25852-47-5	10-30	Not listed	Not listed
TREATED SILICON DIOXIDE, SYNTHETIC, CRYSTALLINE-FREE 67762-90-7	5-15	10 mg/m ³	Not listed
2-HYDROXYETHYL METHACRYLATE 868-77-9	<5	Not listed	Not listed
DIMETHYLBENZYL HYDROPEROXIDE 80-15-9	<3	Not listed	Not listed
ACRYLIC ACID 79-10-7	0.1-1.0	2 ppm	10 ppm; 30 mg/m ³

3. HAZARDS IDENTIFICATION

Toxicity:

May cause eye and skin irritation. Ingestion may irritate digestive tract and cause nausea, vomiting and diarrhea. May cause skin sensitization. Note: This product does not contain microcyrstalline silica. Eye and skin contact, ingestion, inhalation

Primary Routes of Entry: Signs and Symptoms of Exposure:

May cause redness to eyes and irritation to nasal passages. Repeated skin contact may cause allergic skin reactions.

Component	Weight%	NTP	ACGIH Carcinogens	IARC Carcinogen
ACRYLIC ACID	0.1-1.0		A4 - Not Classifiable	Group 3 Monograph 71, 1999;
79-10-7			as a Human	Supplement 7, 1987;
			Carcinogen	Monograph 19, 1979

Aggravated Medical Condition:

May aggrevate preexisting dermatitis.

4. FIRST AID MEASURES	
Ingestion:	Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation:	Move to fresh air in case of accidental inhalation of vapours. Oxygen or artificial respiration if needed. Obtain medical attention.
Skin Contact:	Wash off with soap and water. If skin irritation persists, call a physician.
Eye Contact:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
	220

5. FIRE FIGHTING MEASURES

Flash Point °F(C°): Recommended Extinguishing Media: Special Fire-Fighting Procedures: Hazardous Products of Combustion: Unusual Fire/Explosion Hazards: >200°F TCC Carbon dioxide, Dry chemical, Foam Firefighters should wear self-contained breathing apparatus. Oxides of carbon, Oxides of nitrogen None.

5. FIRE FIGHTING MEASURES

Lower Explosive Limit: Upper Explosive Limit: n/d n/d

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Maintain good ventilation. Take up with an inert absorbent. Store in a closed waste container until disposal.

7. HANDLING AND STORAGE

Storage: Handling: Store below 100°F. Keep in cool and dark place. Avoid direct sunlight. Avoid prolonged skin contact. Keep away from eyes. Wash hands before eating and smoking.

Not required under normal use. In case of insufficient ventilation, wear suitable respiratory equipment.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eyes: Skin: Ventilation: Safety glasses. Neoprene or nitrile gloves recommended. General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits (or to the lowest feasible levels when limits have not been established) during the use of this product.

Respiratory Protection:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Red gel
Odor:	Mild
Boiling Point:	>300°F
pH:	Does not apply
Solubility in Water:	Slight
Specific Gravity:	1.08-1.18
VOC(Wt.%):	1.5%
Vapor Pressure:	<5 mm Hg @ 25°C
Vapor Density (Air=1):	>1
Evaporation Rate:	n/d

10. STABILITY AND REACTIVITY

Chemical Stability: Hazardous Polymerization: Incompatabilities: Conditions to Avoid: Hazardous Products of Combustion: Stable at normal conditions Will not occur Strong oxidizers, Metal salts, heat and amines Heat Oxides of carbon, Oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

See Section 3

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Recommended Method of Disposal: Disposal should be made in accordance with federal, state and local regulations. US EPA Waste Number: NH - Not a RCRA Hazardous Waste Material

14. TRANSPORTATION INFORMATION

DOT (49CFR 172)

U.S. Department of Transportation - DOT - 49 CFR (Ground)		
DOT Shipping Name:	Not regulated	
Hazard Class:	None	
UN/ID Number:	None	
IATA (Air)		
Proper Shipping Name:	Not regulated	
Class or Division:	None	
UN/ID Number:	None	

IMDG (Vessel)

Proper Shipping Name:	Not regulated
Hazard Class:	None
UN Number:	None
Marine Pollutant:	None

15. REGULATORY INFORMATION

SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.

DIMETHYLBENZYL HYDROPEROXIDE

California Proposition 65: No California Prop 65 chemicals are known to be present at or above the No Significant Risk Level

TSCA Inventory Status: All components of this product are listed (or exempt) on the EPA TSCA inventory.

16. OTHER INFORMATION

 Estimated NFPA Rating:
 HEALTH 2, FLAMMABILITY 1, REACTIVITY 0.

 Estimated HMIS Classification:
 HEALTH 2, FLAMMABILITY 1, PHYSICAL HAZARD 0

 (NFPA is a registered trademark of the National Fire Protection Association)
 HEALTH 2, FLAMMABILITY 1, PHYSICAL HAZARD 0

 (HMIS is a registered trademark of the National Fire Protection Association)
 HEALTH 2, FLAMMABILITY 1, PHYSICAL HAZARD 0

Prepared By:	Denise Boyd, Manager-Environmental, Health & Safety	Revision Date: March 13, 2013
Company:	ITW Permatex 10 Columbus Blvd. Hartford, CT USA 06106	Revision Number: 4
Telephone No.:	1-87-Permatex (877) 376-2839	

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: AQF-2 FOAMING AGENT

Revision Date:

04-Jan-2011

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: Synonyms: Chemical Family: Application:	AQF-2 FOAMING AGENT None Blend Foaming Agent
Manufacturer/Supplier	Halliburton Energy Services P.O. Box 1431 Duncan, Oklahoma 73536-0431 Emergency Telephone: (281) 575-5000
Prepared By	Chemical Compliance Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Diethylene glycol	111-46-6	5 - 10%	Not applicable	Not applicable
Ethylene glycol monobutyl ether	111-76-2	10 - 30%	20 ppm	50 ppm

3. HAZARDS IDENTIFICATION

Hazard Overview

May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Combustible.

4. FIRST AID MEASURES

Inhalation	If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.
Skin	In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.
Eyes	In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.
Ingestion	Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.
Notes to Physician	Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Flash Point/Range (C): Flash Point Method: Autoignition Temperature (F): Autoignition Temperature (C): Flammability Limits in Air - Lowe Flammability Limits in Air - Uppe		142 61 PMCC Not Determined Not Determined Not Determined
Fire Extinguishing Media	Water fog, carbon dioxi	de, foam, dry chemical.
Special Exposure Hazards	Decomposition in fire m	ay produce toxic gases.
Special Protective Equipment for Fire-Fighters	r Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.	
NFPA Ratings: HMIS Ratings:	Health 1, Flammability Health 1, Flammability	

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures	Prevent from entering sewers, waterways, or low areas.
Procedure for Cleaning /	Isolate spill and stop leak where safe. Remove ignition sources and work with non-
Absorption	sparking tools. Contain spill with sand or other inert materials. Scoop up and remove. Do NOT spread spilled product with water.

7. HANDLING AND STORAGE

Handling Precautions	Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.
Storage Information	Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Keep from freezing. Product has a shelf life of 36 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.
Personal Protective Equipment	If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection	Not normally needed. But if significant exposures are possible then the following respirator is recommended: Organic vapor respirator.
Hand Protection	Impervious rubber gloves.
Skin Protection	Rubber apron.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.

9. PHYSICAL AND CHEMICAL PROPERTIES

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Oxides of sulfur. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin irritation.
Eye Contact	May cause moderate eye irritation.

Ingestion	Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.
Aggravated Medical Conditions	Skin disorders.
Chronic Effects/Carcinogenicity	Prolonged or repeated exposure may cause fetal damage and testicular effects.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not determined

Ecotoxicological Information

Acute Fish Toxicity: Acute Crustaceans Toxicity Acute Algae Toxicity:	Not determined Not determined Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging	Follow all applicable national or local regulations.	
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14. TRANSPORT INFORMATION

Land Transportation

DOT (Bulk)

NA1993, Combustible Liquid, N.O.S., Combustible Liquid, III (Contains Ethylene Glycol Monobutyl Ether)

Canadian TDG

Not restricted

ADR

Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels:

Combustible

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.	
EPA SARA Title III Extremely Hazardous Substances	Not applicable	
EPA SARA (311,312) Hazard Class	Acute Health Hazard Chronic Health Hazard Fire Hazard	
EPA SARA (313) Chemicals	This product contains toxic chemical(s) listed below which is(are) subject to the reporting requirements of Section 313 of Title III of SARA and 40 CFR Part 372: Glycol Ethers//111-76-2	
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.	
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.	
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.	
MA Right-to-Know Law	One or more components listed.	
NJ Right-to-Know Law	One or more components listed.	
PA Right-to-Know Law	One or more components listed.	
Canadian Regulations		
Canadian DSL Inventory	All components listed on inventory. AQF-2 FOAMING AGENT	

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS Not applicable

Additional Information	For additional information on the use of this product, contact your local Halliburton representative.	
	For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.	
Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.	
END OF MSDS		

Material Safety Data Sheet



Argon

Section 1. Chemical product and company identification

Product name	: Argon
Supplier	: AIRGAS INC., on behalf of its subsidiaries 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
Product use	: Synthetic/Analytical chemistry.
Synonym MSDS #	 argon, compressed; Cryogenic Liquid Argon, Liquid Argon 001004
Date of Preparation/Revision	: 5/6/2013.
In case of emergency	: 1-866-734-3438

Section 2. Hazards identification

Physical state	: Gas. [COLORLESS, ODORLESS INERT GAS OR LIQUID]
Emergency overview	: WARNING!
	GAS: CONTENTS UNDER PRESURE. Do not puncture or incinerate container. Can cause rapid suffocation. May cause severe frostbite. LIQUID: Extremely cold liquid and gas under pressure. Can cause rapid suffocation. May cause severe frostbite.
	Do not puncture or incinerate container. Contact with rapidly expanding gases or liquids can cause frostbite.
Routes of entry	: Inhalation
Potential acute health eff	<u>ects</u>
Eyes	: Contact with rapidly expanding gas may cause burns or frostbite. Contact with cryogenic liquid can cause frostbite and cryogenic burns.
Skin	: Contact with rapidly expanding gas may cause burns or frostbite. Contact with cryogenic liquid can cause frostbite and cryogenic burns.
Inhalation	: Acts as a simple asphyxiant.
Ingestion	: Ingestion is not a normal route of exposure for gases. Contact with cryogenic liquid can cause frostbite and cryogenic burns.
Medical conditions aggravated by over- exposure	: Acute or chronic respiratory conditions may be aggravated by overexposure to this gas.

See toxicological information (Section 11)

Section 3. Composition, Information on Ingredients

<u>Name</u>	CAS number	<u>% Volume</u>	Exposure limits
Argon	7440-37-1	100	Oxygen Depletion [Asphyxiant]

Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin contact	: None expected.
Frostbite	: Try to warm up the frozen tissues and seek medical attention.
Inhalation	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	: As this product is a gas, refer to the inhalation section.

Section 5. Fire-fighting measures

Flammability of the product	: Non-flammable.
Products of combustion	: No specific data.
Fire-fighting media and instructions	: Use an extinguishing agent suitable for the surrounding fire.
	Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.
	Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions	suit	nediately contact emergency personnel. Keep unnecessary personnel away. Use table protective equipment (section 8). Shut off gas supply if this can be done safely. late area until gas has dispersed.
Environmental precautions		oid dispersal of spilled material and runoff and contact with soil, waterways, drains I sewers.
Methods for cleaning up		nediately contact emergency personnel. Stop leak if without risk. Note: see section 1 emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Handling	: High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement. Never allow any unprotected part of the body to touch uninsulated pipes or vessels that contain cryogenic liquids. Prevent entrapment of liquid in closed systems or piping without pressure relief devices. Some materials may become brittle at low temperatures and will easily fracture.
Storage	 Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). For additional information concerning storage and handling refer to Compressed Gas Association pamphlets P-1 Safe Handling of Compressed Gases in Containers and P-12 Safe Handling of Cryogenic Liquids available from the Compressed Gas Association, Inc.

Section 8. Exposure controls/personal protection

-	
Engineering controls	: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Personal protection	
Eyes	 Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
	When working with cryogenic liquids, wear a full face shield.
Skin	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
	The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93
Hands	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
	Insulated gloves suitable for low temperatures
Personal protection in case of a large spill	: Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.
Product name	
argon	Oxygen Depletion [Asphyxiant]

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Molecular weight	: 39.95 g/mole
Molecular formula	: Ar
Boiling/condensation point	: -185.7°C (-302.3°F)
Melting/freezing point	: -189.2°C (-308.6°F)
Critical temperature	: -122.4°C (-188.3°F)
Vapor density	: 1.38 (Air = 1). Liquid Density@BP: 87 lb/ft3 (1393 kg/m3)
Specific Volume (ft ³ /lb)	: 9.70874
Gas Density (lb/ft ³)	: 0.103

Section 10. Stability and reactivity

Stability and reactivity	: The product is stable.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

and the second second

TOXICITY data	
Other toxic effects on humans	: No specific information is available in our database regarding the other toxic effects of this material to humans.
Specific effects	
Carcinogenic effects	: No known significant effects or critical hazards.
Mutagenic effects	: No known significant effects or critical hazards.
Reproduction toxicity	: No known significant effects or critical hazards.

Section 12. Ecological information

Aquatic ecotoxicity

Not available.

Environmental fate

: Not available.

Environmental hazards : No known significant effects or critical hazards.

Toxicity to the environment : Not available.

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.Return cylinders with residual product to Airgas, Inc.Do not dispose of locally.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1006	ARGON, COMPRESSED	2.2	Not applicable (gas).	NON-FLAMMALE CAS	<u>Limited</u> quantity Yes.
	UN1951	Argon, refrigerated liquid				Packaging instruction Passenger aircraft Quantity limitation: 75 kg
						Cargo aircraft Quantity limitation: 150 kg
TDG Classification	UN1006 UN1951	ARGON, COMPRESSED Argon, refrigerated liquid	2.2	Not applicable (gas).		Explosive Limit and Limited Quantity Index 0.125
						Passenger Carrying Road or Rail Index 75
						<mark>Special</mark> provisions 42
Mexico Classification	UN1006	ARGON, COMPRESSED	2.2	Not applicable (gas).	NON-PLANMABLE CAS.	-
	UN1951	Argon, refrigerated liquid				

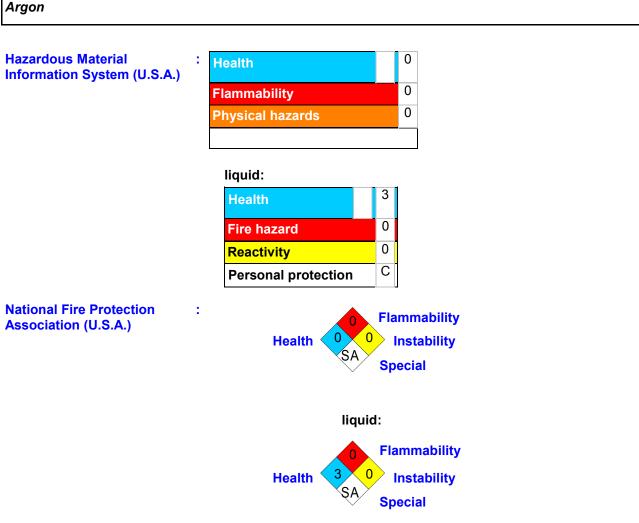
"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Section 15. Regulatory information

United States	
U.S. Federal regulations	 TSCA 8(a) IUR: argon United States inventory (TSCA 8b): This material is listed or exempted.
	SARA 302/304/311/312 extremely hazardous substances: No products were found. SARA 302/304 emergency planning and notification: No products were found. SARA 302/304/311/312 hazardous chemicals: argon SARA 311/312 MSDS distribution - chemical inventory - hazard identification: argon: Sudden release of pressure
	Clean Water Act (CWA) 307: No products were found.
	Clean Water Act (CWA) 311: No products were found.
	Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
	Clean Air Act (CAA) 112 regulated toxic substances: No products were found.
State regulations	 Connecticut Carcinogen Reporting: This material is not listed. Connecticut Hazardous Material Survey: This material is not listed. Florida substances: This material is not listed. Illinois Chemical Safety Act: This material is not listed. Illinois Toxic Substances Disclosure to Employee Act: This material is not listed. Louisiana Reporting: This material is not listed. Louisiana Spill: This material is not listed. Massachusetts Spill: This material is not listed. Massachusetts Substances: This material is listed. Michigan Critical Material: This material is not listed. Mew Jersey Hazardous Substances: This material is listed. New Jersey Spill: This material is not listed. New Jersey Toxic Catastrophe Prevention Act: This material is not listed. New York Acutely Hazardous Substances: This material is not listed. New York Toxic Chemical Release Reporting: This material is not listed. New York Toxic Chemical Release Reporting: This material is not listed. New York Toxic Chemical Release Reporting: This material is not listed. New York Toxic Chemical Release Reporting: This material is not listed.
Canada	
WHMIS (Canada)	 Class A: Compressed gas. CEPA Toxic substances: This material is not listed. Canadian ARET: This material is not listed. Canadian NPRI: This material is not listed. Alberta Designated Substances: This material is not listed. Ontario Designated Substances: This material is not listed. Quebec Designated Substances: This material is not listed.

Section 16. Other information

: GAS: CONTENTS UNDER PRESURE. Do not puncture or incinerate container. Can cause rapid suffocation. May cause severe frostbite. LIQUID: Extremely cold liquid and gas under pressure. Can cause rapid suffocation. May cause severe frostbite.
: Class A: Compressed gas.



Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Texaco Aries®

Product Use: Rock Drill Oil Product Number(s): CPS221541, CPS221542, CPS221543, CPS221551, CPS221565 Synonyms: Texaco Aries® 100, Texaco Aries® 150, Texaco Aries® 220, Texaco Aries® 320, Texaco Aries® 46 Company Identification Chevron Products Company Global Lubricants 6001 Bollinger Canyon Road San Ramon, CA 94583 United States of America

Transportation Emergency Response CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information email : lubemsds@chevrontexaco.com Product Information: 800-LUBE-TEK MSDS Requests: 800-414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS		
COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	80 - 100 %weight

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- OIL MIST MAY CAUSE RESPIRATORY IRRITATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water. **Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse. **Ingestion:** No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice. **Inhalation:** If exposed to excessive amounts of material in air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 162 °C (324 °F) (Min)

Autoignition: No Data Available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames. **PROTECTION OF FIRE FIGHTERS:**

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not breathe oil mist at concentrations above the recommended mineral oil mist exposure limit. **General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection:

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3			

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Amber Physical State: Liquid Odor: Petroleum odor pH: Not Applicable Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 Boiling Point: >315°C (599°F) Solubility: Soluble in hydrocarbons; insoluble in water Freezing Point: Not Applicable Specific Gravity: 0.87 - 0.92 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) Viscosity: 28.8 cSt @ 40°C (104°F) (Min)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components. **Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components. **Skin Sensitization:** No product toxicology data available.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components. Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

96 hour(s) LC50: >5000 mg/kg (Oncorhynchus mykiss) This material is not expected to be harmful to aquatic organisms.

ENVIRONMENTAL FATE

This material is not expected to be readily biodegradable. This material is considered inherently biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements. **DOT Shipping Description:** PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR **Additional Information:**NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO

2. Delayed (Chronic) Health Effects: NO

- 3. Fire Hazard: NO
- 4. Sudden Release of Pressure Hazard: NO
- 5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: EINECS (European Union), IECSC (China), KECI (Korea), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), PICCS (Philippines).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Lubricating oil)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1, SPRAY APPLICATIONS - SPRA

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 12,15

Revision Date: 05/09/2006

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

SPECIAL FIRE EXPLOSION HAZARDS:

LIKE ANY SEALED CONTAINER, BATTERY CELLS MAY RUPTURE WHEN EXPOSED TO EXCESSIVE HEAT; THIS COULD RESULT IN THE RELEASE OF FLAMMABLE OR CORROSIVE

ITEM: 4WT09 - BATTERY 1.5 V AA PK24 ORDER: 0207613492 DROP LOCATION: 100

MATERIAL SAFETY DATA SHEET (MSDS) This MSDS should be attached or kept with the respective product with which it is associated. Associated Grainger Items GXT34, 1WC71, 1WC72, 1WC73, 1WC74, 6MX35, 2V421, 2V422, 2V532, 2V533, 2V534 4WT07, 4WT08, 4WT09, 4WT11, 5U076, 4LW07, 4LW13, 4LV99, 5U813, 3WA30, 3WA31 3WA32, 3WA33, 3WA34 - 5. HEALTH HAZARD DATA -THRESHOLD LIMIT VALUE (TLV) AND SOURCE: NA RAYOVAC(R*) EFFECTS OF OVEREXPOSURE NONE . (IN FIRE OR RUPTURE SITUATION SEE SECTION 2 AND SECTION 4) RAYOVAC CORPORATION 601 RAYOVAC DRIVE MADISON, WI 53711 EMERGENCY FIRST AID PROCEDURES: SKIN AND EYES: IN THE EVENT THAT BATTERY RUPTURES, FLUSH EXPOSED SKIN WITH COPIOUS QUANTITIES OF FLOWING LUKEWARM WATER FOR A MINIMUM OF 15 MINUTES. GET IMMEDIATE MEDICAL ATTENTION FOR EYES. WASH SKIN WITH SOAP AND WATER. PHONE: 608-275-3340 FAX: 608-275-4577 HTTP://WWW.RAYOVAC.COM SWALLOWING: SMALLOWING: INDESTION OF A BATTERY CAN BE HARMFUL. CALL THE NATIONAL CAPITAL POISON CONTROL CENTER (202-625-3333 - COLLECT) OR YOUR LOCAL POISON CONTROL CENTER (800-222-1222), DAY OR NIGHT - FOR ADVICE AND FOLLOW-UP. MATERIAL SAFETY DATA SHEET 1. WE WOULD LIKE TO INFORM OUR CUSIOMERS THAT THESE BATTERIES ARE EXEMPT ARTICLES AND ARE NOT SUBJECT TO THE 29 CFR 1910.1200 OSHA REQUIREMENT, OR TO THE CANADIAN WHMIS REQUIREMENTS AND THE SHEETS ARE SUPPLIED AS A SERVICE TO YOU. FOR OTHER MSDSS AND RELATED INFORMATION, VISIT: HTTP://WWW.RAYOVAC.COM/CUSIOMER/MSDS/MSDS.SHIML. FOR MORE INFORMATION, VISIT: HTTP://WWW.NEMA.ORG/INDEX NEMA.CFM/666. - 6. REACTIVITY DATA -2. THESE BATTERIES ARE SUITABLE FOR LANDFILL DISPOSAL (SEE SECTION 7). STABLE OR UNSTABLE: STABLE INCOMPATTBILITY (MATERIALS TO AVOID) : NA HAZARDOUS DECOMPOSITION PRODUCTS: NA PRODUCT NAME: ALKALINE BATTERIES - "NO MERCURY" FORMULA DECOMPOSITION TEMPERATURE (0 DEG, F): NA SIZES: ALL HAZARDOUS POLYMERIZATION: WILL NOT OCCUR EMERGENCY TELEPHONE NUMBER: 800-424-9300 (24 HR. CHEMITREC) CONDITIONS TO AVOID: AVOID ELECTRICAL SHORTING. ENVIRONMENTAL HEALTH & SAFETY INFORMATION: 262-523-9000 EDITION DATE: 03/01/2004 - 7. SPILL OR LEAK PROCEDURES -APPROVED BY: KEVIN J. DOMACK PROCEDURES TO CONTAIN AND CLEAN UP LEARS OR SPILLS: IN THE EVENT OF A BATTERY RUPTURE, PREVENT SKIN CONTACT AND COLLECT ALL RELEASED MATERIAL IN A PLASTIC LINED METAL CONTAINER. - 2. INTREDIENTS -REPORTING PROCEDURE: REFORT ALL SPILLS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REPORTING REQUIREMENTS. INCREDIENT NAME CAS # e. 177.574 MANGANESE DTOXTDE 1313-13-9 32 - 38 0.2 MG/M3 (TWA) WASTE DISPOSAL METHOD: WASTE DISPOSAL METHOD: WHEN SHREDDED DER TOXICITY CHARACTERISTIC LEACHATE PROCEDURE (TCLP) DARAMETHERS AND TESTED PER SW 846, 3RD EDITION, TEST METHODS FOR EVALUATING SOLID WASTE, INDEPENDENT CERTIFIED LABORATORY ANALYSES HAVE INDICATED THESE RAYOVAC BATTERY TYPES TO HAVE NO HAZARDOR WASTE CHARACTERISTICS (PER 40 CFR, RART 261.24) AND CAN BE LANDFILLED IF ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS ARE COMPLED WITH. TCLP DATA IS AVAILABLE UPON REQUEST. FOR ADDITIONAL INFORMATION ON DISPOSAL OR RECYCLING OPTIONS, VISIT: HTTP://WWW.RAYOVAC.COM/ABOUT/ENVIRONMENTAL/E_FAQ.SHIML. STEEL 7439-89-6 19 - 23 ZINC 7440-66-6 11 - 16 2 MG/M3 (ZnO, DUST, TWA) POTASSIUM HYDROXIDE C 2 MG/MB (STEL) 1310-58-3 5 - 9 GRAPHITE 7782-42-5 3 ~ 5 2 MG/M3 (TWA) BARIUM SULFATE 7727-43-7 <5 10 MG/MB (TWA) WATER, PAPER, PLASTIC, OTHER BALANCE - 8. PROTECTION INFORMATION -*SOURCE: RESPIRATORY PROTECTION (SPECIFY TYPE) : NA ACGIH THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS, 2003. VENTILATION LOCAL EXHAUST: NA MECHANICAL (GENERAL) : NA ----- 3. PHYSICAL DATA NA SPECIAL: OTHER: NA BOILING POINT @ 760 MMHg (DEG. C): NA PROTECTIVE GLOVES: NA VAPOR PRESSURE (MMHq @ 25 DEG, C); NA EYE PROTECTION: NA VAPOR DENSITY (AIR = 1): NA OTHER PROTECTIVE CLOTHING: NA DENSITY (GRAMS/CC) : NA PERCENT VOLATILE BY VOLUME (%): NA - 9. SPECIAL PRECAUTIONS -HANDLING AND STORAGE: STORE IN A DRY PLACE. STORING UNPACKAGED CELLS TOGETHER COULD RESULT IN CELL EVAPORATION RATE (BUTYL ACETATE = 1): NA STORE IN A DRY PLACE. STORIM SHORTING AND HEAT BUILD-UP. PHYSICAL STATE: NA SOLUBILITY IN WATER (* BY WEIGHT): NA TRANSPORTATION-SHIPPING: TRANSPORTATION-SHIPPING: THESE ARE "BATTERIES, DRY" AND ARE NOT CONSIDERED TO BE A "HAZARDOUS MATERIAL" PER THE DEPT. OF TRANSPORTATION (USDOT) REGULATIONS OR "DANGEROUS GOODS" PER THE INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA) REGULATIONS. SHIPMENTS MUST COMPLY WITH THE GENERAL DUTY CLAUSE OF USDOT 49 CFR 172.102 (A) (1) SPECTAL PROVISION 130, "TO PREVENT SHORTING POTENTIAL WHILE TRANSPORTING." pH: NA APPEARANCE AND ODOR: GROMETRIC SOLID OBJECT ---- 4. FIRE & EXPLOSION HAZARD DATA -FLASH POINT: NA — 10. SARA 313 — NOTIFICATION IS NOT REQUIRED BECAUSE THESE PRODUCTS ARE ARTICLE(S) THAT DO NOT RELEASE A COVERED TOXIC CHEMICAL UNDER THE NORMAL CONDITIONS OF PROCESSING OR USE. FLAMMABLE LIMITS IN AIR (%): NA LOWER (LEL): NA UPPER (UEL): NA EXTINGUISHING MEDIA: USE WATER, FOAM OR DRY POWDER, AS APPROPRIATE. NOTTOR: THE INFORMATION AND RECOMMENDATIONS SET FORTH ARE MADE IN GOOD FAITH AND ARE BELIEVED TO BE ACCURATE AT THE DATE OF PREPARATION. RAYOVAC CORPORATION MAKES NO WARRANTY EXPRESSED OR IMPLIED. AUTO-TONTTON: NA SPECIAL FIRE FIGHTING PROCEDURES: AS WITH ANY FIRE, WEAR SELF-CONTAINED BREATHING APPARATUS TO AVOID INHALATION OF HAZARDOUS DECOMPOSITION PRODUCTS (SEE SECTION 2). NA = NOT APPLICABLE

MATERIAL SAFETY DATA SHEET



Drilling Fluids

BENTONITE

Actorial manage	DENTONITE		
Material name Chemical name	BENTONITE Bentonite		
Applications	VISCOSIFIER		
Supplier	VISCOSIFIER Baker Hughes Drilling Fluids		
ouppilo	2001 Rankin Rd.		
	Houston, TX 77073	000	
	Emergency telephone number 713-439-8	900	
2. Composition / Information o	n Ingredients		-
Components		CAS #	Percent
CRYSTALLINE SILICA, QUARTZ		14808-60-7	< 6
Non-hazardous and other componen	ts below reportable levels		> 90
3. Hazards Identification			
Emergency overview	Harmful in contact with eyes. Prolonged e with this material can cause irritation to th		
OSHA regulatory status	However exposure limits detailed in Section	on 8 should be observed.	
Potential health effects			
Eyes	Dust or powder may irritate eye tissue. Ey	•	
Skin	Health injuries are not known or expected under normal use. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).		
Inhalation	Inhalation of dusts may cause respiratory irritation.		
Ingestion	Health injuries are not known or expected under normal use.		
Target organs	Eyes. Lungs. Respiratory system.		
Chronic effects	Chronic lung disease (silicosis) and/or lun breathing of the dust of this material. Sho		prolonged/repeated
Signs and symptoms	Cough. Discomfort in the chest. Shortness Chronic lung disease (silicosis) and/or lun breathing of the dust of this material.		
4. First Aid Measures			
First aid procedures			
Eye contact	Hold eyelids apart and flush eyes with ple attention if irritation develops or persists.	nty of water for at least 15	minutes. Get medical
Skin contact	Wash off skin with soap and water. Get m	edical attention if irritation	develops or persists.
Inhalation	Move to fresh air. If breathing is difficult, g develop or persist.	jive oxygen. Call a physici	an if symptoms
Ingestion	If swallowed, rinse mouth with water (only large amount does occur, seek medical at). If ingestion of a
Notes to physician	Symptoms may be delayed.		
General advice	Call a physician if symptoms develop or p of the material(s) involved, and take preca seek medical advice (show the label wher	autions to protect themselv	
5. Fire Fighting Measures			
Flammable properties	Dusts at sufficient concentrations can form	n explosive mixtures with	air.
Hazardous combustion products	Product is not considered combustible.		
Extinguishing media			
-	Use any media suitable for the surroundin		

Material name: BENTONITE

Material ID: 1284 Version #: 1.0 Revision date: 27-JUN-2006 Print date: 27-JUN-2006

firefighters

Protective equipment for

Firefighters should wear full protective clothing including self contained breathing apparatus.

	••	
6. Accidental Release Measure	S	
Personal precautions	Surfaces may become slippery after spillage. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.	
Evacuation procedures	Keep unnecessary personnel away. Stay upwind.	
Environmental precautions	Do not flush into surface water or sanitary sewer system.	
Methods for containment	Stop the flow of material, if this is without risk. Contain the discharged material.	
Methods for cleaning up	Vacuum or sweep up material and place in a disposal container. Avoid the generation of dusts during clean-up. Do not flush with water. Forms smooth, slippery surfaces on floors, posing an accident risk.	
7. Handling and Storage		
Handling	Wear personal protective equipment. Minimize dust generation and accumulation. In case of insufficient ventilation, wear suitable respiratory equipment.	
Storage	Keep in a dry, cool and well-ventilated place. Keep container tightly closed.	
8. Exposure Controls / Persona	I Protection	
Exposure guidelines		
ACGIH - Threshold Limits Values - Tir	ne Weighted Averages (TLV-TWA)	
CRYSTALLINE SILICA, QUARTZ	14808-60-7 0.05 Mg/m3 TWA (respirable fraction)	
ACGIH - Threshold Limits Values - TL		
CRYSTALLINE SILICA, QUARTZ	14808-60-7 silicosis; lung function; lung fibrosis; cancer	
Engineering controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.	
Personal protective equipment		
Eye / face protection	Wear dust goggles.	
Skin protection	Use of protective coveralls and long sleeves is recommended. Use of impervious boots is recommended.	
Hand protection	Rubber or plastic gloves.	
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.	
General hygeine considerations	Do not breathe dust. Wash hands before breaks and immediately after handling the product.	
9. Physical and Chemical Prope	erties	
Appearance / Color / Form	Powder Beige Solid	

Appearance / Color / Form	Powder. Beige. Solid.
Odor	Odourless.
Clarity	Not available
Odor threshold	Not available
Physical state	Solid
рН	9.5 (10% aq. solution)
Melting point	2930 °F (1610 °C) estimated
Freezing point	Not available
Boiling point	4046 °F (2230 °C) estimated
Flash point	Non-flammable
Evaporation rate	Not available
Flammability limits in air, lower, % by volume	Not available
Flammability limits in air, upper, % by volume	Not available
Vapor pressure	Not available
Vapor density	Not available
Specific gravity	2.6
Relative density	Not available

Solubility	Insoluble in water.
Octanol/H2O coeff	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Bulk density	2700 kg/m3 @ 20 Deg C

10. Chemical Stability and Reativity Information

Chemical stability	Stable at normal conditions.
Conditions to avoid	None known.
Incompatible materials	None known.
Hazardous decomposition products	None known.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Component analysis - LD50		
Toxicology Data - Selected LD50s and	LC50s	
CRYSTALLINE SILICA, QUARTZ	14808-60-7	Oral LD50 Rat: 500 mg/kg
Chronic effects		disease (silicosis) and/or lung cancer may result from prolonged/repeated the dust of this material.
Carcinogenicity		
ACGIH - Threshold Limits Values - Car	cinogens	
CRYSTALLINE SILICA, QUARTZ	14808-60-7	A2 - Suspected Human Carcinogen
NTP (National Toxicology Program) - R	•	
CRYSTALLINE SILICA, QUARTZ	14808-60-7	Known Carcinogen
12. Ecological Information		
Ecotoxicity	This material	is not expected to be harmful to aquatic life.
Persistence / degradability	The methods substances.	for determining the biological degradability are not applicable to inorganic
Bioaccumulation / accumulation	Not expected	I to bioaccumulate.
Mobility in environmental media	This material	is insoluble in water and will sink in the marine environment.
13. Disposal Considerations		
Disposal instructions	waste accord responsibility	in its present state, when discarded or disposed of, is not a hazardous ling to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the of the user of the product to determine, at the time of disposal, whether the ts RCRA criteria for hazardous waste. Can be landfilled, when in compliance julations.

14. Transport Information

Department of Transportation (DOT) Requirements

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory Information

13. Regulatory information	
US federal regulations	All components are on the U.S. EPA TSCA Inventory List.
	OSHA Process Safety Standard: This material is not known to be hazardous by the OSHA Highly Hazardous Process Safety Standard, 29 CFR 1910.119.
	CERCLA/SARA Hazardous Substances - Not applicable.
NTP (National Toxicology Program) -	Report on Carcinogens - Known Carcinogens
CRYSTALLINE SILICA, QUARTZ	14808-60-7 Known Carcinogen

Occupational Safety and Health Admin	istration (OSF	IA)	
29 CFR 1910.1200 hazardous chemical	No		
CERCLA (Superfund) reportable quantity	None		
Superfund Amendments and Reauthor	ization Act of	1986 (SARA)	
Hazard categories	Immediate I Delayed Ha Fire Hazard Pressure Ha Reactivity H	l - No azard - No	
Section 302 extremely hazardous substance	No		
Section 311 hazardous chemical	Yes		
Food and Drug Administration (FDA)	Total food a Indirect food GRAS food	d additive	
Inventory status			
Country(s) or region	Inventory na	ame	On inventory (yes/no)*
Australia	Australian I	nventory of Chemical Substances (AICS)	Yes
Canada	Domestic S	ubstances List (DSL)	Yes
Canada	Non-Domes	stic Substances List (NDSL)	No
China		Existing Chemical Substances in China (CCS)	Yes
Europe	European Ir	nventory of New and Existing Chemicals (EINECS)	Yes
Europe	European L	ist of Notified Chemical Substances (ELINCS)	No
Japan	Japanese Ir	nventory of Existing and New Chemical Substances	(ENCS) No
Korea	Korean Inve	entory of Chemicals (KICS)	Yes
New Zealand	New Zealar	nd Inventory	No
Philippines	Philippine Ir	nventory of Chemicals and Chemical Substances (Pl	ICCS) Yes
United States & Puerto Rico	Toxic Subst	ances Control Act (TSCA) Inventory	Yes
A "Yes" indicates that all components of	of this product c	comply with the inventory requirements administered by the	governing country(s)
International regulations	The product national law	t does not need to be labelled in accordance with EC /s.	directives or respective
IARC - Group 1 (Carcinogenic to Huma			
CRYSTALLINE SILICA, QUARTZ	14808-60-7	Monograph 68, 1997 (Listed under Crystalline silica, inh cristobalite from occupational sources)	
State regulations	cancer.	This product contains a chemical known to the Stat	te of California to cause
California - Proposition 65 - Carcinoge			
CRYSTALLINE SILICA, QUARTZ Massachusetts - Right To Know List	14808-60-7	carcinogen, initial date 10/1/88 (airborne particles of res	pirable size)
CRYSTALLINE SILICA, QUARTZ	14808-60-7	Carcinogen; Extraordinarily hazardous	
New Jersey - Right to Know Hazardou	s Substance Lis	st	
CRYSTALLINE SILICA, QUARTZ	14808-60-7	sn 1660	
Pennsylvania - RTK (Right to Know) Li CRYSTALLINE SILICA,	14808-60-7	Present (includes dust)	
QUARTZ	14000-00-7		
16. Other Information			
HMIS ratings	Health: 1* Flammabilit Physical ha Personal pr	zard: 0	
NFPA ratings	Health: 1 Flammabilit Instability: 0		

EU preparer US preparer Issue date Supercedes date MSDS sections updated The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Melanie Thatcher - Tel +44 (0)1224 721597 Cheryl Hood - (713)625-4888 06-27-2006 03-22-2006 Product and Company Identification: Alternate Trade Names Composition / Information on Ingredients: Component Summary Hazards Identification: US Hazardous Fire Fighting Measures: Fire & Explosion Properties Physical & Chemical Properties: Physical & Chemical Properties Regulatory Information: Canada Regulatory Information: US federal regulations

Initial Preparation Date:	3/30/09
Last Revision Date:	2/10/11
Effective Date:	4/5/12

MATERIAL SAFETY DATA SHEET

PRODUCT IDENTITY: BLUE DEF®

1. CHEMICAL PRODUCT & COMPANY INFORMATION

OLD WORLD INDUSTRIES, LLC 4065 COMMERCIAL AVENUE NORTHBROOK, ILLINOIS 60062 PHONE: 847-559-2000 EMERGENCY PHONE: 1-800-424-9300 (CHEMTREC)

2. COMPOSITION / INFORMATION ON INGREDIENTS

			\underline{TLV}	<u>(ACGIH</u>)
<u>Material</u>	<u>CAS#</u>	<u>% by Wt.</u>	<u>STEL</u>	<u>TWA</u>
Urea	57-13-6	32.5	Not established	10 mg/m ³ (AIHA WEEL)
Water	7732-18-5	67.5	N/A	N/A

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Effects of overexposure may include irritation of the nose, throat and digestive tract, headaches, coughing, nausea, vomiting and transient disorientation.

Lowest Known LD50 (Oral) for Urea:

Cattle 510 mg/kg Mouse 11,500 – 13,000 mg/kg Rabbit 8,200 mg/kg Rat 14,300 – 15,000 mg/kg

Lowest Known LD50 (Skin):

Carcinogency:

Not known

Not identified as a carcinogen

National Toxicology Program:	Not identified as a carcinogen
International Agency for Research on Cancer:	Not identified as a carcinogen
OSHA:	Not identified as a carcinogen

HAZARD RATING SYSTEM

NPFA: HEALTH: 1 FLAMMABILITY: 0	REACTIVITY: 0
HMIS: HEALTH: 1 FLAMMABILITY: 0	REACTIVITY: 0
PERSONAL PROTECTION: B (safety glasses and g	(loves)

KEY: 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

POTENTIAL HEALTH EFFECTS

Eye: Contact may cause mild eye irritation, including stinging, watering and redness.

Skin: Contact may cause mild skin irritation, including redness and burning. No harmful effects from skin absorption have been reported.

Inhalation (Breathing): No information available. Studies by other exposure routes suggest a low degree of toxicity by inhalation. Symptoms include sore throat, sneezing, coughing and shortness of breath.

Ingestion (Swallowing): If ingestion occurs, symptoms include sore throat, mouth and stomach irritation. Larger ingestion amounts beyond listed exposure limits may cause defects to the central nervous system (e.g. dizziness and headache).

Cancer: Not identified as a carcinogen

Target Organs: Eyes, skin, respiratory system, digestive, central nervous system.

Developmental: Inadequate evidence available for this material.

Pre-Existing Medical Conditions: Aggravation of these conditions may occur if overexposure is experienced.

4. FIRST AID MEASURES Ensure physician has access to this MSDS.

Routes of Entry: Inhalation, Skin, Ingestion

Signs and Symptoms of Exposure: Effects of overexposure may include irritation of the nose, throat and digestive tract, headaches, coughing, nausea, vomiting and transient disorientation.

TREATMENT

Eyes: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and warm water. If irritation or redness develops and persists, seek medical attention.

Inhalation: If respiratory difficulties develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion: Do **NOT** induce vomiting. First aid is not normally required; however, if swallowed and symptoms such as dizziness and headache develop, seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician: Treat symptomatically and monitor.

5. FIRE FIGHTING MEASURES

FIRE & EXPLOSION HAZARD DATA

Flammable Properties: Product is not flammable. Closed containers may rupture with exposure to excess heat or flame due to internal container pressure.

Flash Point: None

 Flammability Limits - % of vapor concentration at which product can ignite in presence of spark.

 LEL:
 No data

 UEL:
 No data

Hazardous Combustion Products: Closed containers exposed to extreme heat can rupture due to pressure building. Carbon oxides, nitrogen oxides, animonia, blurei, cyanuric acid and other irritating runes and smoke.

Extinguishing Media: Use extinguishing agent suitable for type of surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Fire Fighting Instructions: Isolate immediate hazard area and keep unauthorized personnel out. Stop spill / release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors. Cool equipment exposed to fire with water, if it can be done with minimal risk.

Protective Equipment For Fire Fighters: Firefighters should use proper protective equipment, such as a self-contained breathing apparatus with full face piece operated in positive pressure mode, suitable for the type of fire / environment they are working to contain and extinguish.

6. ACCIDENTAL RELEASE MEASURES

Protect People: Wear appropriate protective equipment, including respiratory protection, as conditions warrant. (See Section 8.)

Protect the Environment: It is recommended that spilled material is prevented from entering sewers, storm drains or natural watercourses, contain material with a dike or with appropriate absorbent materials such as sand, clay, soil or commercially available absorbent material that is non-combustible and inert. Place reclaimed liquid and absorbent into recovery or salvage drums for disposal (Refer to Section 13 for appropriate disposal). The EPA has no established reportable quantity for spills for this material (Refer to Section 15), secondary containment is not specified.

Methods for cleanup:

Small Spill: Stop leak if without risk. Material free from contamination can be used for its original purpose. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large Spill: Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not wear contaminated clothing or shoes.

Storage: Keep container(s) tightly closed. Do not allow product to come in contact with extreme heat and flame or with strong oxidizers. Use and store this material in cool, dry, well-ventilated areas. Do not store at temperatures below 40° F. Store only in the container with which the product was delivered or in uncontaminated bulk containers. Keep away from any incompatible material such as strong acids or oxidizing agents (e.g. hydrogen peroxide, nitric acid). (See Section 10.) Protect container(s) against physical damage. Keep out of reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection: None required during normal vehicle servicing or normal conditions. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Seek advice from respiratory protection specialists.

Skin Protection: None required during normal vehicle servicing or under normal handling and storage conditions (see Section 7). To prevent skin contact, use impermeable gloves. Nitrile, Viton, Butyl.

Eye / Face Protection: Not required during normal vehicle servicing or under normal handling and storage conditions (see Section 7). If splashing might occur, wear eye protection such as chemical splash goggles.

Engineering Controls: Not required during normal vehicle servicing or under normal handling and storage conditions (see Section 7). If current ventilation practices are not adequate to minimize exposure below ACGIH limits, additional ventilation or exhaust systems may be required.

Other Protective Equipment: Not required during normal vehicle servicing or under normal handling and storage conditions (see Section 7). It is recommended that a source of clean water should be available in the work area for flushing eyes and skin if immersion or heavy splashing is expected. Impervious clothing should be worn as needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
pH:	9.0 - 10.0
Boiling Point:	>212°F
Crystallization Point:	12 ° F
Pounds/Gallon:	9.09
Specific Gravity (Water =1):	1.09
Vapor Pressure (mm of Hg):	Not applicable
Vapor Density (Air=1):	0.6 H20, >1
Water Solubility:	100%
Appearance:	Colorless, clear liquid
Odor:	Ammonia
Evaporation Rate:	<1

10. STABILITY & REACTIVITY DATA

Stability: Stable under normal conditions of storage and handling.

Conditions to Avoid: Avoid excessive heat, sparks and open flame. Do not mix with any other chemicals or products.

Incompatibility (Materials to Avoid). Avoid contact with strong oxidizing agents such as chlorine (bleach), peroxides, chromates, nitric acid, perchlorates, concentrated oxygen or permanganates. Contact can generate heat, fires, explosions and release toxic fumes (see Section 5). In addition, urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride.

Hazardous Decomposition Products: If involved in a fire, oxides of carbon and nitrogen may be generated; exposure to heat may generate ammonia fumes.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Na identified ar known information available an mutagenicity, target argans ar developmental taxicity

Toxicological data: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

	LC ₅₀ (4 hr)	LD ₅₀	
Ingredients	Inh, rat	Oral	Dermal
Urea	N/Av	8,471 mg/kg (rat)	8,200 mg/kg (rabbit)

12. ECOLOGICAL INFORMATION

Environmental effects:	Readily biodegradable
Microtox Data:	24 hr. EC50 Daphnia magna straus: >10,000 mg/L
Freshwater Fish Species Data:	96 hr. LC50 Barillius barna: >9,100mg/L

Aquatic Ecotoxicity Acute LC50 Test for Urea

Result	Species	Exposure
83,700 to 86,900 ug/L Fresh water	Fish – Rohu Labeo Rohita FRY – 0.8 g	96 hours
65,800 to 70,200 ug/L Fresh water	Fish – Rohu Labeo FRY – 0.8 g	96 hours
22,500 ug/L Fresh water	Fish – Mozambique Tilapia & Tilapia Mossambica	96 hours
16,700 to 19,600 ug/L Fresh water	Fish – Rohu Labeo Rohita Egg	96 hours
90,100 to 93,900 ug/L Fresh water	Fish – Rohu Labeo Rohita – FRY 0.8 g	96 hours
5,000 ug/L Fresh water	Fish – Giant Gourami Colisa Fasciata – Fingerling	96 hours

This product does not show any bioaccumulation phenomena.

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, is not a RCRA "listed" or "characteristic" hazardous waste. Use resulting in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CER 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D. As a non-hazardous liquid waste, it should be solidified with stabilizing agents such as sand, fly ash, or clay absorbent, so that no free liquid remains before disposal to an industrial waste landfill.

RCRA # Not listed

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT): NOT CONTROLLED UNDER DOT.

Proper Shipping Name:
Hazard Class:
UN Identification:
Packing Group:

Labels Required: Placard: Exemption: Reportable Quantity:

ICAO/IATA: NOT CONTROLLED UNDER ICAO/IATA.

Proper Shipping Name:
Hazard Class:
UN Identification:
Packing Group:

Labels Required: Placard: Exemption: Reportable Quantity:

IMDG: NOT CONTROLLED UNDER IMDG.

Proper Shipping Name: Hazard Class: UN Identification: Packing Group: Labels Required: Placard: Exemption: Reportable Quantity:

15. REGULATORY INFORMATION

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

EPA (CERCLA) Reportable Quantity: None. This material is not classified as hazardous under U.S. EPA regulations.

SARA Title III:

SARA 302, Extremely Hazardous Substances, 40 CFR 355: No extremely hazardous substances are in this product.

SARA 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Urea. No hazards resulting from the material as supplied. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA 313: SARA 313, Toxic Chemicals Notification, 40 CFR 372: This material is not subject to SARA notification requirements, since it does not contain any Toxic Chemical constituents above de minimus concentrations.

California Proposition 65: This material does not contain chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS Information: This product is not a WHMIS controlled product in Canada. Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

16. OTHER INFORMATION

Contact: Thomas Cholke

Phone: (847) 559-2225

Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this MSDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

ITW Permatex 10 Columbus Blvd. Hartford, CT 06106 USA Telephone: 1-87-Permatex (877) 376-2839 Emergency: 800-255-3924 (ChemTel) International Emergency: 00+ 1+ 813-248-0585

Material Safety Data Sheet

1. PRODUCT IDENTIFICATION	
Product Name:	6C SENSOR SAFE BLUE RTV SILICONE 12.9 OZ
Item No:	80628
Product Type:	Elastomeric rubber

2. COMPOSITION/INFORMATION ON INGREDIENTS			
Component	Weight%	ACGIH; TLV-TWA	OSHA PEL
POLY (DIMETHYLSILOXANE), HYDROXY TERMINATED 70131-67-8	30-50	Not listed	Not listed
LIMESTONE 1317-65-3	20-40	Not listed	15 mg/m ³
CALCIUM CARBONATE 471-34-1	15-40	10 mg/m ³	Not listed
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT 64742-47-8	<5	Not listed	Not listed
VINYL OXIMINOSILANE 2224-33-1	<5	Not listed	Not listed
STEARIC ACID 57-11-4	<2	Not listed	Not listed
2-BUTANONE OXIME 96-29-7	0.5-2.0	Not listed	Not listed

3. HAZARDS IDENTIFICATION

Toxicity:

May cause eye and skin irritation. When this product if exposed to moisture, butanone oxime may be formed. May be harmful if swallowed. May irritate lips, gums, tongue, mouth, nose and throat. Eye and skin contact, ingestion, inhalation

Primary Routes of Entry: Signs and Symptoms of Exposure:

Butanone oxime produced during curing is toxic and irritates eyes, nose and throat. Overexposure to the silane may cause coma and respiratory failure.

Component	Weight%	NTP	ACGIH Carcinogens	IARC Carcinogen
POLY (DIMETHYLSILOXANE), HYDROXY TERMINATED	30-50	Not Listed		
70131-67-8				
LIMESTONE	20-40	Not Listed		
1317-65-3				
CALCIUM CARBONATE	15-40	Not Listed		
471-34-1				
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	<5	Not Listed		
64742-47-8				
VINYL OXIMINOSILANE	<5	Not Listed		
2224-33-1				
STEARIC ACID	<2	Not Listed		
57-11-4				
2-BUTANONE OXIME	0.5-2.0	Not Listed		
96-29-7				

Aggravated Medical Condition:

Preexisting eye, skin and respiratory disorders may be aggravated by overexposure to this product.

4. FIRST AID MEASURES

Ingestion: Inhalation: Skin Contact: Rinse mouth. If swallowed, DO NOT induce vomiting. Keep individual calm. Obtain medical attention. Move to fresh air in case of accidental inhalation of vapours. Obtain medical attention. Wipe off material with paper towel or cloth Wash off with soap and water If skin irritation persists, call a physician

4. FIRST AID MEASURES

Eye Contact:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES	
Flash Point °F(C°):	>200°F TCC
Recommended Extinguishing Media:	Carbon Dioxide, Dry Chemicals, Foam.
Special Fire-Fighting Procedures:	Water spray may be ineffective on flames but should be used to keep fire- exposed containers cool.
Hazardous Products of Combustion:	Oxides of carbon, Oxides of nitrogen, Methyl ethyl ketone, possibly methyl ethyl ketoxime, Silica fume, Formaldehyde
Unusual Fire/Explosion Hazards:	None.
Lower Explosive Limit: Upper Explosive Limit:	Not determined Not determined

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures:

Wipe or scrape up spill material. Maintain good ventilation for large spills. Place scrap material in a wellventilated area and allow to cure to rubber. Clean up spills thoroughly as residue is slippery.

7. HANDLING AND STORAGE

Storage: Handling: Store in a dry area below 90 degrees F. Keep container closed when not in use. Do not take internally. Do not inhale vapors. Avoid contact with skin and eyes. Do not wear contact lenses. Wash hands before eating and smoking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eyes:	Safety glasses.
Skin:	Neoprene or nitrile gloves recommended.
Ventilation:	General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits (or to the lowest feasible levels when limits have not been established) during the use of this product.
Respiratory Protection:	An approved organic vapor respirator should be worn when exposures are expected to exceed the applicable limits.
Comments:	When heated to temperatures above 300 degrees F. in the presence of air, this product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard and a known skin and respiratory sensitizer. Safe handling conditions may be maintained by keeping vapor concentrations below the OSHA permissible limit for formaldehyde

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Blue paste
Odor:	Mild
Boiling Point:	Not applicable, polymeric material
pH:	Does not apply
Solubility in Water:	Polymerized
Specific Gravity:	1.43
VOC(Wt.%):	<3%, <43 g/l
Vapor Pressure:	<5 mm Hg
Vapor Density (Air=1):	3.0
Evaporation Rate:	Not Determined

10. STABILITY AND REACTIVITY

Chemical Stability: Hazardous Polymerization: Incompatabilities: Conditions to Avoid: Hazardous Products of Combustion: Stable at normal conditions Will not occur Polymerized by contact with moisture, Strong oxidizers, Acids, Iron Exposure to moisture. Oxides of carbon, Oxides of nitrogen, Methyl ethyl ketone, possibly methyl ethyl ketoxime, Silica fume, Formaldehyde

11. TOXICOLOGICAL INFORMATION

See Section 3

12. ECOLOGICAL INFORMATION

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Recommended Method of Disposal: Disposal should be made in accordance with federal, state and local regulations. **US EPA Waste Number:** NH - Not a RCRA Hazardous Waste Material

14. TRANSPORTATION INFORMATION

DOT (49CFR 172)

U.S. Department of Transportation - DOT - 49 CFR (Ground)

DOT Shipping Name:	Not regulated
Hazard Class:	None
UN/ID Number:	None
IATA (Air)	
Proper Shipping Name:	Not regulated
Class or Division:	None
UN/ID Number:	None
IMDG (Vessel)	
Proper Shipping Name:	Not regulated
Hazard Class:	None

I

Proper Shipping Name:	Not regulate
Hazard Class:	None
UN Number:	None
Marine Pollutant:	None

15. REGULATORY INFORMATION

SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.

NONE

California Proposition 65: No California Prop 65 chemicals are known to be present at or above the No Significant Risk Level

TSCA Inventory Status: All components of this product are listed (or exempt) on the EPA TSCA inventory.

16. OTHER INFORMATION

HEALTH 1, FLAMMABILITY 1, REACTIVITY 0. **Estimated NFPA Rating:** HEALTH 1, FLAMMABILITY 1, PHYSICAL HAZARD 0 Estimated HMIS Classification: (NFPA is a registered trademark of the National Fire Protection Association) (HMIS is a registered trademark of the National Paint and Coatings Association)

Prepared By:	Denise Boyd, Manager-Environmental, Health & Safety	Revision Date: June 07, 2012
Company:	ITW Permatex 10 Columbus Blvd. Hartford, CT USA 06106	Revision Number: 2
Telephone No.:	1-87-Permatex (877) 376-2839	

LOCTITE CORPORATION	ROCKY HILL, CONNECTIO EMERGENCY PHONE: (860		12/10/98
	MATERIAL SAFETY DATA	SHEET	Page 01 of 07
Permatex(R) Blue RTV Sili 81860	cone Gasket Maker		
1. CHEMICAL PRODUCT AND	COMPANY IDENTIFICATIO	N	
Item No.: Part No.: Product Type:	Sensor-Safe 81860 6MA Silicone		
2. COMPOSITION, INFORMA	TION ON INGREDIENTS		
Ingredients	CAS No.	%	
SEALANT			
<pre>Poly(dimethylsiloxane), hydroxy terminated Proprietary SILICA, AMORPHOUS Ethyltriacetoxysilane Methyltriacetoxysilane Poly(dimethylsiloxane), dimethyl ACETIC ACID</pre>	70131-67-8 Proprietary 7631-86-9 17689-77-9 4253-34-3 63148-62-9 64-19-7	80-90 10-30 5-15 1-10 1-10 1-10 ***	
PROPELLANT			
BUTANE I SOBUTANE PROPANE	106-97-8 75-28-5 74-98-6	5-80 5-80 5-80	
*** Up to 5% acetic acid	may be released upon e	exposure to moi	sture.
Ingredients which have	exposure limits		
Exposure Limits (TWA) Ingredients	ACGIH (TLV)	OSHA (PEL)	OTHER
SEALANT			
Proprietary SILICA, AMORPHOUS ACETIC ACID	None 10mg/m3 TWA 10 ppm TWA 25 mg/m3	15 mg/m3 6mg/m3 TWA 10 ppm TWA 25 mg/m3	None None None
LOCTITE CORPORATION	ROCKY HILL, CONNECTIO EMERGENCY PHONE: (860		12/10/98
	MATERIAL SAFETY DATA	SHEET	Page 02 of 07
Item No.:	Sensor-Safe 81860		
2. COMPOSITION, INFORMA	TION ON INGREDIENTS		(continued)

PROPELLANT			
BUTANE	800 ppm TWA	800 ppm TWA	None
PROPANE	1900mg/M3 2500 ppm	1900mg/M3 1000 ppm 1800 mg/m3	None
Exposure Limits (STEL) Ingredients	ACGIH (TLV)	OSHA (PEL)	
SEALANT			
ACETIC ACID	15 ppm 37 mg/m3	None	
PROPELLANT			
PROPANE	Asphyxiant	Asphyxiant	
3. HAZARDS IDENTIFICATION	NC		
Toxicity: Primary Routes of Entry: Signs and Symptoms of Exposure:	Eye and skin irrita gums, tongue, mouth harmful if swallowe No injury from sili reasonal use. If us some respiratory sy product, as with an allergic cinditions exposure to any che sealant is nonhazar When heated to temp the presence of air dehyde vapors. Form hazard and a known sensitizer. Vapors Safe handling condi keeping vapor conce permissible limit f Skin, eyes, inhalat Acetic acid produce	, nose, and thro d. ca dust should o e creates respir stems injury may y chemical, may in certain peop mical should be dous. eratures above 3 , this product c aldehyde is a po skin and respira irritate eyes, n tions may be mai ntrations below or formaldehyde. ion, ingestion.	at. May be ccur during able particles, occur. This ebhance le. Unnecessary avoided. Cured 00°F (150°C) in an form formal- tential cancer tory ose and throat. ntained by the OSHA
LOCTITE CORPORATION	ROCKY HILL, CONNECTI	CUT 06067	12/10/98
	EMERGENCY PHONE: (86	0) 571-5100	
	MATERIAL SAFETY DATA	SHEET	Page 03 of 07
Item No.:	Sensor-Safe 81860		
3. HAZARDS IDENTIFICATIO	N		(continued)
Existing Conditions	eyes, nose, and thr Swallowing large an discomfort. Vapor o throat, and eyes se injury and consider more.	ounts may cause verexposure may riously with mod	irritate nose, erate corneal
Aggravated by Exposure:	Methyltriacetoxysil	ane: Eye, skin,	and pulmonary

disorders. Literature Referenced Carcinogen Target Organ and Other Health Effects NTP IARC OSHA Ingredients SEALANT Poly(dimethylsiloxane), hydroxy terminated No Data NO NO NO No Data Proprietary NO NO NO SILICA, AMORPHOUS NUI NO N/A NO Ethyltriacetoxysilane No Data NO NO NO No Data Methyltriacetoxysilane NO NO NO Poly(dimethylsiloxane), IRR NO NO dimethyl NO ACETIC ACID COR EYE GAS IMM IRR NO NO NO PROPELLANT BUTANE CAR CNS IRR NO NO NO ISOBUTANE CAR CNS LUN NO NO NO PROPANE CAR CNS IRR NO NO NO _____ Abbreviations N/A Not Applicable CAR Cardiac CNS Central nervous system COR Corrosive EYE Eyes GAS Gastrointestinal IMM Immune system IRR Irritant LUN Lung NUI Nuisance dust LOCTITE CORPORATION 12/10/98 ROCKY HILL, CONNECTICUT 06067 EMERGENCY PHONE: (860) 571-5100 Page 04 of 07 MATERIAL SAFETY DATA SHEET Sensor-Safe Item No.: 81860 4. FIRST AID MEASURES Ingestion: Rinse mouth with water several times. Do not induce vomiting. Keep individual calm. Obtain medical attention. Inhalation: Remove to fresh air. Treat symptomatically. Wipe off paste with paper towel or cloth. Skin Contact: Wash exposed area with detergent and water. Obtain medical attention if irritation persists. Eye Contact: Immediately flush at least 15 minutes with plenty of water. Obtain medical attention. 5. FIRE FIGHTING MEASURES Flash Point: More than 200°F (Base) Method: Tag Closed Cup Recommended Extinguishing Agents: Carbon dioxide, foam, dry chemical, water fog Special Firefighting Procedures: Keep containers cool. Use equipment or shielding required to protect against bursting or venting containers.

Hazardous Products formed by Fire or Thermal Decomp Acetic acid, formaldehyde, silica fume, oxides of carbon. Unusual Fire or Explosion Hazards: Heated cans may burst. Explosive Limits: (% by volume in air)Lower Not available (% by volume in air)Upper Not available 6. ACCIDENTAL RELEASE MEASURES Steps to be taken in case of spill or leak: Remove sources of ignition. Wear proper protection equipment as specified in Section 8. Wipe, scrape, or soak up spilled material with an inert absorbent. Maintain good ventilation for large spills. Place scrap material in a well ventilated place and allow to cure to rubber. Wash walking surface with detergent and water to reduce slipping hazard. 7. HANDLING AND STORAGE Safe Storage: Store in a dry area below 90°F away from heat, sparks, or open flames. Service 1-800-243-4874 for shelf life information) (Contact Loctite Customer Handling: Keep away from heat, sparks, or open flames. LOCTITE CORPORATION 12/10/98 ROCKY HILL, CONNECTICUT 06067 EMERGENCY PHONE: (860) 571-5100 MATERIAL SAFETY DATA SHEET Page 05 of 07 Sensor-Safe Item No.: 81860 7. HANDLING AND STORAGE (continued) Avoid breathing vapor. Avoid eye or skin contact. 8. EXPOSURE CONTROLS, PERSONAL PROTECTION Eyes: Safety glasses or goggles. Skin: Cloth gloves under rubber or plastic gloves. Ventilation: Provide mechanical and local ventilation sufficient maintain vapor concentration below TLV. Respiratory Use NIOSH approved respirator if TLV is exceeded. See Section 2 for Exposure Limits. 9. PHYSICAL AND CHEMICAL PROPERTIES Appearance: Blue paste Acetic acid, slightly medicinal Odor: Boiling Point: Not Applicable, Polymeric material pH: Does not apply Solubility in Water: Polymerized 1.04 at 70°F Specific Gravity Volatile Organic Compound (EPA Method 24) 4.6%, 47.8 grams per liter

Vapor Pressure: 66 mm Hg at 70°F More than 1 Vapor Density: Evaporation Rate (Ether = 1)Slower than butyl acetate 10. STABILITY AND REACTIVITY Stability: Stable Hazardous Polymerization: Will not occur Incompatibility: Oxidizing material. Polymerized by contact with moisture. Conditions to Avoid: Not available Hazardous Decomposition Products (non-thermal): Acetic acid 11. TOXICOLOGICAL INFORMATION Hydroxy terminated silicone: Oral LD50 more than 40,000 mg/kg (rat) Inhalation LC50 more than 535 mg/liter (rat) Methyltriacetoxysilane: Oral LD50 = 2060 mg/kg. Proprietary component: Estimated oral LD50 more than 40,000 mg/kg (rat) Estimated inhalation LC50 more than 535 mg/liter LOCTITE CORPORATION 12/10/98 ROCKY HILL, CONNECTICUT 06067 EMERGENCY PHONE: (860) 571-5100 MATERIAL SAFETY DATA SHEET Page 06 of 07 Sensor-Safe Item No.: 81860 11. TOXICOLOGICAL INFORMATION (continued) (rat) 12. ECOLOGICAL INFORMATION No data available 13. DISPOSAL CONSIDERATIONS Recommended methods of disposal: Incinerate following EPA and local regulations. Do not incinerate pressurized cans. EPA Hazardous Waste Number D001 - Hazardous waste per 40CFR 261.21 14. TRANSPORTATION INFORMATION DOT (49 CFR 172) Domestic Ground Transport Proper Shipping Name: Consumer Commodity Hazard Class or Division: Unrestricted Identification Number: None Marine Pollutant: None ΤΑΤΑ Proper Shipping Name: Consumer Commodity (Not more than 500 ml); Aerosols, flammable n.o.s. (More than 500 ml) Class or Division: Class 9 (Not more than 500 ml);

UN or ID Number:	Division 2.1 (More than 500 ml) ID 8000 (Not more than 500 ml); UN 1950 (More than 500 ml)
15. REGULATORY INFORMATIC	N
CA Proposition 65:	No Prop65 chemicals are known to be present.
16. OTHER INFORMATION	
Estimated NFPA(R) Code: Health Hazard: Fire Hazard: Reactivity Hazard: Specific Hazard:	2 Sealant: 1; Propellant: 4 1 Does not apply
Estimated HMIS(R) Code: Health Hazard: Flammability Hazard: Reactivity Hazards:	2* Sealant: 1; Propellant: 4 1
LOCTITE CORPORATION	12/10/98 ROCKY HILL, CONNECTICUT 06067 EMERGENCY PHONE: (860) 571-5100
	MATERIAL SAFETY DATA SHEET Page 07 of 07
Item No.:	Sensor-Safe 81860
16. OTHER INFORMATION	(continued)
Personal Protection:	See Section 8.
NFPA is a registered HMIS is a registered	
Prepared By: Title: Company: (24hr.) Phone: Revision Date:	Stephen Repetto Research Chemist- Safety,Health&Regulatory Affairs Loctite Corp., 1001 Tr Br Cr, Rocky Hill CT 06067 (860) 571-5100 November 12, 1998 Revision: First Issue

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CRC MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification

Product Name: NAPA/CRC® Brakleen® Brake Parts Cleaner (aerosol)

Product Number (s): 091314

Product Use: Brake cleaner

Manufacturer / Supplier Contact Information:

In United States: CRC Industries, Inc. 885 Louis Drive Warminster, PA 18974 <u>www.crcindustries.com</u> 1-215-674-4300 (General) (800) 521-3168 (Technical) (800) 272-4620 (Customer Service) In Canada: CRC Canada Co. 2-1246 Lorimar Drive Mississauga, Ontario L5S 1R2 <u>www.crc-canada.ca</u> 1-905-670-2291 In Mexico: CRC Industries Mexico Av. Benito Juárez 4055 G Colonia Orquídea San Luís Potosí, SLP CP 78394 www.crc-mexico.com 52-444-824-1666

24-Hr Emergency - CHEMTREC: (800) 424-9300 or (703) 527-3887

Section 2: Hazards Identification

Emergency Overview

DANGER: Vapor Harmful. Harmful or Fatal if Swallowed. Contents Under Pressure As defined by OSHA's Hazard Communication Standard, this product is hazardous. Appearance & Odor: Colorless liquid, irritating odor at high concentrations

Potential Health Effects:

ACUTE EFFECTS:

- EYE: May cause slight temporary eye irritation. Vapors may also cause irritation.
- SKIN: Short single exposure may cause skin irritation. Prolonged exposure may cause severe skin irritation, even a burn. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.
- INHALATION: Dizziness may occur at concentrations of 200 ppm. Progressively higher levels may also cause nasal irritation, nausea, incoordination, and drunkenness. Very high levels or prolonged exposure could lead to unconsciousness and death.
- INGESTION: Single dose oral toxicity is considered to be extremely low. Swallowing large amounts may cause injury if aspirated into the lungs. This may be rapidly absorbed through the lungs and result in injury to other body systems.
- CHRONIC EFFECTS: Repeated contact with skin may cause drying or flaking of skin. Excessive or long term exposure to vapors may increase sensitivity to epinephrine and increase myocardial irritability.
- TARGET ORGANS: Central nervous system. Possibly liver and kidney.

Medical Conditions Aggravated by Exposure: None known.

See Section 11 for toxicology and carcinogenicity information on product ingredients.

Section 3: Composition/Information on Ingredients

COMPONENT	CAS NUMBER	% by Wt.
Tetrachloroethylene (PERC)	127-18-4	55 – 99
Petroleum Distillates	8052-41-3 / 64742-47-8	1 – 30
Trichloroethylene	79-01-6	0 - 20
Carbon Dioxide	124-38-9	< 5

Section 4: First Aid Measures

Eye Contact: Immediately flush with plenty of water for 15 minutes. Call a physician if irritation persists.

- Skin Contact: Remove contaminated clothing and wash affected area with soap and water. Call a physician if irritation persists. Wash contaminated clothing prior to re-use.
- Inhalation: Remove person to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call a physician.
- Ingestion: Do NOT induce vomiting. If spontaneous vomiting is about to occur, place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. Never give anything by mouth to a person who is not fully conscious. Do not leave victim unattended. Call a physician immediately

Note to Physicians: Because rapid absorption may occur through lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. If burn is present, treat as any thermal burn, after decontamination. Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary. No specific antidote.

Section 5: Fire-Fighting Measures

This product is nonflammable in accordance with aerosol flammability definitions. (See 16 CFR 1500.3(c)(6)) This product does not exhibit a flame extension or a flashback.				
None (TCC)	Upper Explosive Limit: Lower Explosive Limit:	ND		

Fire and Explosion Data:

Suitable Extinguishing Media: Use dry chemicals, carbon dioxide, foam or inert gasses.

Products of Combustion: Oxides of carbon, hydrogen chloride, trace amounts of phosgene and chlorine

Explosion Hazards: Aerosol containers, when exposed to heat from fire, may build pressure and explode.

Protection of Fire-Fighters: Firefighters should wear self-contained, NIOSH-approved breathing apparatus for protection against suffocation and possible toxic decomposition products. Proper eye and skin protection should be provided. Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition.

Section 6: Accidental Release Measures

Product Name: NAPA/CRC® Brakleen® Brake Parts Cleaner (aerosol) **Product Number (s):** 091314

Personal Precautions: Use personal protection recommended in Section 8. Do not breathe vapors.

Environmental Precautions:	Take precautions to prevent contamination of ground and surface waters. Do not flush into
	sewers or storm drains.

Methods for Containment & Clean-up: Dike area to contain spill. Ventilate the area with fresh air. If in confined space or limited air circulation area, clean-up workers should wear appropriate respiratory protection. Recover or absorb spilled material using an absorbent designed for chemical spills. Place used absorbents into proper waste containers.

Section 7: Handling and Storage

Handling Procedures: Vapors of this product are heavier than air and will collect in low areas. Make sure ventilation removes vapors from low areas. Do not eat, drink or smoke while using this product. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. For product use instructions, please see the product label.
Storage Procedures: Store in a cool dry area out of direct sunlight. Aerosol cans must be maintained below 120 F to prevent cans from rupturing.

Aerosol Storage Level: I

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines:

	OS	SHA	AC	GIH	0	THER	
COMPONENT	TWA	STEL	TWA	STEL	TWA	SOURCE	UNIT
Tetrachloroethylene	100	N.E.	25	100	NE		ppm
-							
Petroleum Distillates	100 (v)	NE	100	NE	NE		ppm
Trichloroethylene	100	200 (v)	10	25	5	mfg*	ppm
Carbon dioxide	5000	30000 v	5000	30,000	N.E.		ppm
N.E. – Not Established (c) – ceiling (s) – skin (v) – vacated							

* TCE manufacturer's internal PEL

Controls and Protection:

- Engineering Controls: Area should have ventilation to provide fresh air. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at the source, preventing dispersion into the general work area. Use mechanical means if necessary to maintain vapor levels below the exposure guidelines. If working in a confined space, follow applicable OSHA regulations.
- Respiratory Protection: None required for normal work where adequate ventilation is provided. If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with organic vapor cartridge. Air monitoring is needed to determine actual employee exposure levels. Use a self-contained breathing apparatus in confined spaces and for emergencies.
- Eye/face Protection: For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear splash-proof goggles.

Product Name: NAPA/CRC® Brakleen® Brake Parts Cleaner (aerosol) **Product Number (s):** 091314

Skin Protection:

Use protective gloves such as PVA, Teflon or Viton. Also, use full protective clothing if there is prolonged or repeated contact of liquid with skin.

Section 9: Physical and Chemical Properties

Color: colorless Odor: irritating odor Odor Threshold: ND
•
Odor Threshold: ND
Specific Gravity: 1.23 – 1.62
Initial Boiling Point: 189 F
Freezing Point: ND
Vapor Pressure: ND
Vapor Density: > 4 (air = 1)
Evaporation Rate: Fast
Solubility: negligible
Coefficient of water/oil distribution (log Pow): ND
pH: NA
Volatile Organic Compounds: <u>wt %</u> : < 45 <u>g/L</u> : < 729 <u>lbs./gal:</u> < 6

Section 10: Stability and Reactivity

Stability: Stable					
Conditions to Avoid:		t sunlight or ultraviolet sources. Avoid open flames, welding arcs, and other high e sources which induce thermal decomposition.			
Incompatible Materials:	Incompatible Materials: Avoid contact with metals such as: aluminum powders, magnesium powders, potassium, sodium, and zinc powder. Avoid unintended contact with amines. Avoid contact with strong acids, strong bases, alkalies and strong oxidizers.				
Hazardous Decompositi	on Products:	Hydrogen chloride, trace amounts of phosgene and chlorine			
Possibility of Hazardous Reactions:		No			

Section 11: Toxicological Information

Long-term toxicological studies have not been conducted for this product. The following information is available for components of this product.

Acute Toxicity:

<u>Component</u>	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Tetrachloroethylene	2629 mg/kg	> 10 g/kg	5200 mg/kg/4H
Petroleum Distillates	No data	No data	>1400 ppm/8H
Trichloroethylene	4920 mg/kg	10,000 mg/kg	12,500 ppm/4H
Carbon dioxide	No data	No data	470,000 ppm/30M

Chronic Toxicity:

<u>Component</u> Tetrachloroethylene	OSHA <u>Carcinogen</u> No	IARC <u>Carcinogen</u> Group 2A	NTP <u>Carcinogen</u> Reasonably Anticipated to be a Carcinogen	<u>Irritant</u> E (mild) / S (severe)	<u>Sensitizer</u> No
Petroleum Distillates	No	No	No	E & S (mild)	Unknown
Trichloroethylene	No	Group 2A	Reasonably Anticipated to be a Carcinogen	E (moderate) / S (mild)	Unknown
Carbon dioxide	No	No	No	None	No
Reproductive Toxicity: Teratogenicity: Mutagenicity:	No informatior No informatior Tetrachloroeth Trichloroethyle	n available. hylene: in vitro animal ene: in vitro animal	E – Eye studies were negative studies were negative mutagenicity studies were neg mutagenicity studies were pre	gative	Respiratory
Synergistic Effects:	No informatior	n available.			

Section 12: Ecological Information

Ecological studies have not been conducted for this product. The following information is available for components of this product.

Ecotoxicity:	Tetrachloroeth	ylene 96 Hr LC50 Rainbow Trout: 5.28 mg/L (static) 96 Hr LC50 Fathead minnow: 13.4 mg/L (flow-through)
	Trichloroethyle	ne 96 Hr LC50 fathead minnow: 44.1 mg/L (flow-through)
Persistence / Degr	adability:	Biodegradation under aerobic conditions is below detectable limits.
		Biodegradation may occur under anaerobic conditions. Biodegradation rate may
		increase in soil and/or water with acclimation.
Bioaccumulation /	Accumulation:	Bioconcentration potential is low (BCF less than 100).
Mobility in Environ	ment:	Potential for mobility in soil is medium.

Section 13: Disposal Considerations

<u>Waste Classification</u>: The dispensed liquid product is a RCRA hazardous waste for toxicity with the following potential waste codes: F001, F002, D039, D040. (See 40 CFR Part 261.20 – 261.33) Aerosol containers should be fully emptied and depressurized before disposal. Empty aerosol containers may be recycled.

All disposal activities must comply with federal, state, provincial and local regulations. Local regulations may be more stringent than state, provincial or national requirements.

Section 14: Transport Information

US DOT (ground): Consumer Commodity, ORM-D

ICAO/IATA (air): Aerosols, non-flammable, containing substances in Division 6.1, Packing Group III, UN1950, 2.2 (6.1)

IMO/IMDG (water): Aerosols, UN1950, 2.2 (6.1), Limited Quantity

Special Provisions: Marine Pollutant

Section 15: Regulatory Information

U.S. Federal Regulations:

<u>Toxic Substances Control Act (TSCA)</u>: All ingredients are either listed on the TSCA inventory or are exempt.

Reportable Quantities (RQ's) exist for the following ingredients:

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):

Tetrachloroethylene (100 lbs) Trichloroethylene (100 lbs)

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Superfund Amendments Reauthorization Act (SARA) Title III: Section 302 Extremely Hazardous Substances (EHS): None

Section 311/312 Hazard Categories:	Fire Hazard Reactive Hazard	No No
	ineactive hazaru	INU
	Release of Pressure	Yes
	Acute Health Hazard	Yes
	Chronic Health Hazard	Yes

Section 313 Toxic Chemicals: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Tetrachloroethylene (< 99%), Trichloroethylene (< 20%)

Clean Air Act:

Section 112 Hazardous Air Pollutants (HAPs): Tetrachloroethylene, Trichloroethylene

U.S. State Regulations:

California Safe Drinking Water and Toxic Enforcement Act (Prop 65):

This product may contain the following chemicals known to the state of California to cause cancer, birth defects or other reproductive harm:

Tetrachloroethylene Cumene (< 0.2%) Trichloroethylene Ethylbenzene (< 0.05%)

Consumer Products VOC Regulations:

This product cannot be sold for use in California and New Jersey. In other states with Consumer Products VOC regulations, this product is compliant as a Brake Cleaner.

State Right to Know:

New Jersey:	127-18-4, 8052-41-3, 79-01-6
Pennsylvania:	127-18-4, 8052-41-3, 79-01-6
Massachusetts:	127-18-4, 8052-41-3, 79-01-6
Rhode Island :	127-18-4, 8052-41-3, 79-01-6

Canadian Regulations:

Canadian DSL Inventory: All ingredients are either listed on the DSL Inventory or are exempt.

WHMIS Hazard Class: A, D1B, D2A, D2B

Product Name: NAPA/CRC® Brakleen® Brake Parts Cleaner (aerosol) Product Number (s): 091314

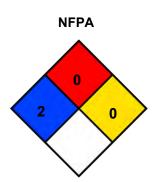
European Union Regulations:

<u>RoHS Compliance</u>: This product is compliant with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003. This product does not contain any of the restricted substances as listed in Article 4(1) of the RoHS Directive.

Additional Regulatory Information: None

Section 16: Other Information

HMIS® (II)				
Health:	2			
Flammability:	0			
Reactivity:	0			
PPE:	В			



Ratings range from 0 (no hazard) to 4 (severe hazard)

Prepared By:	Michelle Rudnick
CRC #:	934A-D
Revision Date:	06/15/2011

Changes since last revision: Section 3: expanded % by Wt ranges Section 9: specific gravity range & volatile organic compounds

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this MSDS consult your supervisor, a health & safety professional, or CRC Industries.

ACGIH:	American Conference of Governmental Industrial Hygienists	NA:	Not Applicable
CAS:	Chemical Abstract Service	ND:	Not Determined
CFR:	Code of Federal Regulations	NIOSH:	National Institute of Occupational Safety & Health
DOT:	Department of Transportation	NFPA:	National Fire Protection Association
DSL:	Domestic Substance List	NTP:	National Toxicology Program
g/L:	grams per Liter		
HMIS:	Hazardous Materials Identification System	PMCC:	Pensky-Martens Closed Cup
IARC:	International Agency for Research on Cancer	PPE:	Personal Protection Equipment
IATA:	International Air Transport Association	ppm:	Parts per Million
ICAO:	International Civil Aviation Organization	RoHS:	Restriction of Hazardous Substances
IMDG:	International Maritime Dangerous Goods	STEL:	Short Term Exposure Limit
IMO:	International Maritime Organization	TCC:	Tag Closed Cup
lbs./gal:	pounds per gallon	TWA:	Time Weighted Average
LC:	Lethal Concentration	WHMIS:	: Workplace Hazardous Materials Information
LD:	Lethal Dose		System

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name:

CAL-SEAL 60

Revision Date:

04-Jan-2011

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: Synonyms: Chemical Family: Application:	CAL-SEAL 60 None Sulfate Additive
Manufacturer/Supplier	Halliburton Energy Services P.O. Box 1431 Duncan, Oklahoma 73536-0431 Emergency Telephone: (281) 575-5000
Prepared By	Chemical Compliance Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Calcium sulfate hemihydrate	10034-76-1	60 - 100%	10 mg/m ³	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview

May cause eye, skin, and respiratory irritation.

4. FIRST AID MEASURES

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Skin	Wash with soap and water. Get medical attention if irritation persists.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Ingestion	Under normal conditions, first aid procedures are not required.
Notes to Physician	Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Flash Point/Range (C): Flash Point Method: Autoignition Temperature (F): Autoignition Temperature (C): Flammability Limits in Air - Lowe Flammability Limits in Air - Uppe		Not Determined Not Determined Not Determined Not Determined Not Determined Not Determined Not Determined
Fire Extinguishing Media	All standard firefighting	media.
Special Exposure Hazards	Not applicable.	
Special Protective Equipment for Fire-Fighters	Not applicable.	
NFPA Ratings: HMIS Ratings:	Health 0, Flammability Health 0, Flammability	

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures	Prevent from entering sewers, waterways, or low areas.
Procedure for Cleaning / Absorption	Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions	Avoid creating or inhaling dust.
Storage Information	Store in a cool, dry location. Product has a shelf life of 24 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	Use in a well ventilated area. Localized ventilation should be used to control dust levels.
Personal Protective Equipment	If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection	Dust/mist respirator. (95%)
Hand Protection	Normal work gloves.
Skin Protection	Normal work coveralls.
Eye Protection	Wear safety glasses or goggles to protect against exposure.
Other Precautions	None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Color: Solid White CAL-SEAL 60 Page 2 of 5

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor:	Odorless
pH:	10.4
Specific Gravity @ 20 C (Water=1):	2.7
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	75
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Partially soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	145

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	None known.
Hazardous Decomposition Products	None known.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.	
Inhalation	May cause respiratory irritation.	
Skin Contact	May cause skin irritation.	
Eye Contact	May cause eye irritation.	
Ingestion	May act as obstruction if swallowed.	
Aggravated Medical Conditions	None known.	
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.	
Other Information	None known.	
Toxicity Tests		
Oral Toxicity:	Not determined	
Dermal Toxicity:	Not determined	
	CAL-SEAL 60	

Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not determined

Ecotoxicological Information

Acute Fish Toxicity: Acute Crustaceans Toxicity Acute Algae Toxicity:	Not determined Not determined Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Bury in a licensed landfill according to federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT

Not restricted

Canadian TDG

Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels:

None

15. REGULATORY INFORMATION

US Regulations	
US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	None
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.
Canadian Regulations	
Canadian DSL Inventory	Product contains one or more components not listed on inventory.
WHMIS Hazard Class	Un-Controlled

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS Not applicable

Additional Information	For additional information on the use of this product, contact your local Halliburton representative.
	For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.
Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name:

CASING SEAL®

Revision Date:

03-Jan-2008

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: Synonyms: Chemical Family: Application:	CASING SEAL® None Mineral Weight Additive
Manufacturer/Supplier	Baroid Fluid Services Product Service Line of Halliburton P.O. Box 1675 Houston, TX 77251 Telephone: (281) 871-4000 Emergency Telephone: (281) 575-5000
Prepared By	Chemical Compliance Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Crystalline silica, cristobalite	14464-46-1	0 - 1%	0.025 mg/m ³	1/2 x <u>10 mg/m³</u> %SiO2 + 2
Crystalline silica, tridymite	15468-32-3	0 - 1%	0.05 mg/m ³	1/2 x <u>10 mg/m³</u> %SiO2 + 2
Crystalline silica, quartz	14808-60-7	1 - 5%	0.025 mg/m ³	10 mg/m³ %SiO2 + 2
Bentonite	1302-78-9	60 - 100%	Not applicable	Not applicable

More restrictive exposure limits may be enforced by some states, agencies, or other authorities.

3. HAZARDS IDENTIFICATION

Hazard Overview

CAUTION!	- ACUTE HEALTH HAZARD
----------	-----------------------

May cause eye and respiratory irritation.

DANGER! - CHRONIC HEALTH HAZARD

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

4. FIRST AID MEASURES

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Skin	Wash with soap and water. Get medical attention if irritation persists.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Ingestion	Under normal conditions, first aid procedures are not required.
Notes to Physician	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):		Not Determined
Flash Point/Range (C):		Not Determined
Flash Point Method:		Not Determined
Autoignition Temperature (F):		Not Determined
Autoignition Temperature (C):		Not Determined
Flammability Limits in Air - Lowe	r (%):	Not Determined
Flammability Limits in Air - Upper		Not Determined
Fire Extinguishing Media	All standard firefighting	media.

Special Exposure Hazards Not applicable.

Special Protective Equipment for Not applicable. Fire-Fighters

NFPA Ratings:	Health 0, Flammability 0, Reactivity 0
HMIS Ratings:	Flammability 0, Reactivity 0, Health 0*

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary None known. Measures

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

7. HANDLING AND STORAGE

Handling Precautions	This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.
Storage Information	Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.
Respiratory Protection	Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product.
Hand Protection	Normal work gloves.
Skin Protection	Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.
Eye Protection	Wear safety glasses or goggles to protect against exposure.
Other Precautions	None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor:OdorlesspH:8-10Specific Gravity @ 20 C (Water=1):2.5Density @ 20 C (Ibs./gallon):Not DetermiBulk Density @ 20 C (Ibs/ft3):Not DetermiBoiling Point/Range (F):Not DetermiBoiling Point/Range (C):Not DetermiFreezing Point/Range (C):Not DetermiFreezing Point/Range (C):Not DetermiVapor Pressure @ 20 C (mmHg):Not DetermiVapor Density (Air=1):Not DetermiPercent Volatiles:Not DetermiEvaporation Rate (Butyl Acetate=1):Not DetermiSolubility in Water (g/100ml):Not DetermiVOCs (Ibs./gallon):Not DetermiViscosity, Dynamic @ 20 C (centipoise):Not DetermiViscosity, Kinematic @ 20 C (centistrokes):Not Determi	ined ined ined ined ined ined ined ined
	ined ined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Hydrofluoric acid.
Hazardous Decomposition Products	Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).
Additional Guidelines	Not Applicable
11. TOXICOLOGICAL INFO	DRMATION
Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).
	Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).
Skin Contact	May cause mechanical skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	None known
Aggravated Medical Conditions	Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

Chronic Effects/Carcinogenicity	Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis. Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).
Other Information	For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768 (1997).
Toxicity Tests	
Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Refer to <u>IARC Monograph 68, Silica, Some Silicates and Organic Fibres (</u> June 1997).
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined Acute Crustaceans Toxicity:Not determined

Acute Algae Toxicity:	Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Bury in a licensed landfill according to federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT Not restricted

Canadian TDG

Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels:

None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard Chronic Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	The California Proposition 65 regulations apply to this product. CASING SEAL® Page 6 of 7

MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.
Canadian Regulations	
Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2A Very Toxic Materials Crystalline silica

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS Not applicable

Additional InformationFor additional information on the use of this product, contact your local Halliburton
representative.For questions about the Material Safety Data Sheet for this or other Halliburton
products, contact Chemical Compliance at 1-580-251-4335.Disclaimer StatementThis information is furnished without warranty, expressed or implied, as to accuracy
or completeness. The information is obtained from various sources including the
manufacturer and other third party sources. The information may not be valid under
all conditions nor if this material is used in combination with other materials or in any
process. Final determination of suitability of any material is the sole responsibility of
the user.

END OF MSDS

MATERIAL SAFETY DATA SHEET CEDAR FIBER

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME:	CEDAR FIBER
CHEMICAL CLASS:	Cellulose material
APPLICATIONS:	Oil well drilling fluid additive. Lost circulation material.
EMERGENCY TELEPHONE:	281-561-1600
SUPPLIER:	Supplied by a Business Unit of M-I L.L.C. P.O. Box 42842, Houston, Texas 77242-2842 See cover sheet for local supplier.
TELEPHONE: FAX:	281-561-1509 281-561-7240
CONTACT PERSON:	Sam Hoskin

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME: Particulates Not Otherwise Classifi- ed (PNOC)	CAS No.:	CONTENTS : 60-100 %	EPA RQ:	TPQ:	
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3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION! MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. Avoid contact with eyes, skin and clothing. Avoid breathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

This product is a/an brown fibrous material. No significant immediate hazards for emergency response personnel are known. May form explosive dust-air mixtures.

ACUTE EFFECTS:

HEALTH HAZARDS, GENERAL:

Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may lead to pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma. Dermatitis and asthma may result from short contact periods.

INHALATION: May be irritating to the respiratory tract if inhaled.

INGESTION: May cause gastric distress, nausea and vomiting if ingested.

SKIN: May be irritating to the skin.

EYES: May be irritating to the eyes.

CHRONIC EFFECTS:

CARCINOGENICITY:

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

ROUTE OF ENTRY:

Inhalation. Skin and/or eye contact.

TARGET ORGANS:

Respiratory system, lungs. Skin. Eyes.

4. FIRST AID MEASURES

GENERAL:	Persons seeking medical attention should carry a copy of this MSDS with them.
INHALATION:	Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.
INGESTION:	Drink a couple of glasses water or milk. Do not give victim anything to drink of he is unconscious. Get medical attention.
SKIN:	Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.
EYES:	Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5. FIRE FIGHTING MEASURES

AUTO IGNITION TEMP, (°F):	N/D
FLAMMABILITY LIMIT - LOWER(%):	N/D
FLAMMABILITY LIMIT - UPPER(%):	N/D

EXTINGUISHING MEDIA:

Carbon dioxide (CO2). Dry chemicals. Foam. Water spray, fog or mist.

SPECIAL FIRE FIGHTING PROCEDURES: No specific fire fighting procedure given.

UNUSUAL FIRE & EXPLOSION HAZARDS: Dust in high concentrations may form explosive mixtures with air.

HAZARDOUS COMBUSTION PRODUCTS: Irritating gases/vapors/fumes. Oxides of: Carbon.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Wear proper personal protective equipment (see MSDS Section 8).

SPILL CLEAN-UP PROCEDURES:

Avoid generating and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Do not contaminate drainage or waterways. Repackage or recycle if possible.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS:

Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation. Mechanical ventilation or local exhaust ventilation is required.

STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

		OSHA PEL:	ACGIH TLV:	OTHER:	LINUTO.
INGREDIENT NA Particulates Not Oth ed (PNOC)		TWA: STEL: 15	TWA: STEL: 10	TWA: STEL:	UNITS: mg/m3 total dust
PROTECTIVE EC			32		
ENGINEERING C	ONTROLS: Use appropriate engineering controls such as, keep worker exposure below the applicable lir	exhaust ventilation a nits.	nd process enclosure	, to reduce air contan	nination and
VENTILATION:	Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.				
RESPIRATORS:	Use at least a NIOSH-approved N95 half-mas containing oil mist/aerosol use at least a NIOS	sk disposable or reuse GH-approved P95 half	able particulate respi -mask disposable or	rator. In work enviro reuseable particulate	nments respirator.
PROTECTIVE GL	OVES: Use suitable protective gloves if risk of skin of	ontact.			
EYE PROTECTIC	ON: Wear dust resistant safety goggles where there	e is danger of eye con	tact.		
PROTECTIVE CL	OTHING: Wear appropriate clothing to prevent repeated	or prolonged skin co	ntact.		
	PRACTICES:		Change work clothir		

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE:
COLOR:
ODOR:
SOLUBILITY DESCRIPTION:
DENSITY/SPECIFIC GRAVITY (g/ml):
BULK DENSITY:
VAPOR DENSITY (air=1):
VAPOR PRESSURE:
pH-VALUE, DILUTED SOLUTION:

Powder, dust. Brown. Characteristic. Insoluble in water. 0.60 TEMPERATURE (°F): 68 301 kg/m3 N/D N/D TEMPERATURE (°F): N/A CONCENTRATION (%M):

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID: Avoid heat.

HAZARDOUS POLYMERIZATION: Will not polymerize.

POLYMERIZATION DESCRIPTION: Not relevant.

MATERIALS TO AVOID: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

No toxicological data is available for this product.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:

No ecological information is available for this product.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT:

This product does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

DISPOSAL METHODS:

Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

GENERAL:

RQ = N/A

U.S. DOT: U.S. DOT CLASS:

Not regulated.

CANADIAN TRANSPORT: TDGR CLASS:

Not regulated.

SEA TRANSPORT: IMDG CLASS:	Not regulated.					
AIR TRANSPORT: ICAO CLASS: Not regulated.						
15. REGULATORY INFORMA	TION					
REGULATORY STATUS OF INGRED	ENTS:	100	1.79			A
NAME: Particulates Not Otherwise Classifi- ed (PNOC)	CAS No:	TSCA: N/A	CERCLA: N/A	SARA 302: N/A	SARA 313: N/A	DSL(CAN): N/A
US FEDERAL REGULATIONS: WASTE CLASSIFICATION:	Not a hazardou:	s waste by l	J.S. RCRA ci	iteria. See Sect	ion 13.	
REGULATORY STATUS:	This Product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):					
	SECTION 313: requirements of Act of 1986 and SARA 311 Cate 1: Immediate (A	Section 31. 40 CFR Pagories:	3 of Title III o art 372.	ontain toxic che of the Superfun	mical subject to d Amendment a	the reporting nd Reauthorization
	The component chemical registr TSCA (U.S.)		duct are lister	d on or are exer	npt from the fol	lowing international
STATE REGULATIONS: STATE REGULATORY STATUS:	This product or be all inclusive				o following reg	ulations (Not meant to
	None.					
CANADIAN REGULATIONS:		5 · D · · · ·	1 . 1 . 1	4.5	an an an an a	he Costoled Product
REGULATORY STATUS:	This Material Safety Data Sheet has been prepared in compilance with the Controled Product Regulations.					
	Canadian WHM	IIS Classific	ation: Not a	Controlled Prod	luct.	
	1					

NPCA HMIS HAZARD INDEX: FLAMMABILITY: REACTIVITY: NPCA HMIS PERS. PROTECT. INDEX: l Slight Hazard 1 Slight Hazard 0 Minimal Hazard E - Safety Glasses, Gloves, Dust Respirator

USER NOTES:

N/A = Not applicable N/D = Not determined

INFORMATION SOURCES:	OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants.
	ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition).
	Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997). Product information provided by the commercial vendor(s).
PREPARED BY:	Sam Hoskin
REVISION No./Repl. MSDS of:	1 / July 27, 1995
54	
MSDS STATUS:	Approved.
DATE: May 1, 1998	

DISCLAIMER:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

CETUS PAO 68, 100

Product Use: Compressor Oil Product Number(s): CPS293026, CPS293027 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com Product Information: (800) LUBE TEK MSDS Requests: (800) 414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Diisodecyl phthalate	68515-49-1	1 - 5 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a synthetic hydrocarbon oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) > 220 °C (> 428 °F)
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not
Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Nitrogen, Phosphorus, Sulfur .

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Special note: Do not use in breathing air apparatus or medical equipment.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear

safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

No applicable occupational exposure limits exist for this material or its components.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless Physical State: Liquid Odor: Hydrocarbon odor pH: Not Applicable Vapor Pressure: No data available Vapor Density (Air = 1): No data available Boiling Point: No data available Solubility: Insoluble in water. Freezing Point: Not Applicable Density: 0.84 kg/l @ 15°C (59°F) (Typical) Viscosity: >64 mm2/s @ 40°C (104°F) Coefficient of Therm. Expansion / °F: No data available Evaporation Rate: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected) Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or

product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR **Additional Information:**NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

3.

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

- Immediate (Acute) Health Effects:
 Delayed (Chronic) Health Effects:
- NO
- NO NO

NO

NO

- 4. Sudden Release of Pressure Hazard:
- 5. Reactivity Hazard:

REGULATORY LISTS SEARCHED: 01-1=IARC Group 1 03=EPCRA 313

Fire Hazard:

 01-2A=IARC Group 2A
 04=CA Proposition 65

 01-2B=IARC Group 2B
 05=MA RTK

 02=NTP Carcinogen
 06=NJ RTK

 07=PA RTK
 07=PA RTK

The following components of this material are found on the regulatory lists indicated. Diisodecyl phthalate 04, 06, 07

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: (Lubricating oil)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This is a new Material Safety Data Sheet. **Revision Date:** DECEMBER 15, 2010

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
DOT - Department of Transportation (USA)IARC - International Agency for Research on	NTP - National Toxicology Program (USA) OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI

MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

CRC MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification

Product Name: Chain & Wire Rope Lube (aerosol)

Product Number (s): 03050, 73050

Product Use: lubricant

Manufacturer / Supplier Contact Information:

In United States: CRC Industries, Inc. 885 Louis Drive Warminster, PA 18974 <u>www.crcindustries.com</u> 1-215-674-4300 (General) (800) 521-3168 (Technical) (800) 272-4620 (Customer Service) In Canada: CRC Canada Co. 2-1246 Lorimar Drive Mississauga, Ontario L5S 1R2 <u>www.crc-canada.ca</u> 1-905-670-2291 In Mexico: CRC Industries Mexico Av. Benito Juárez 4055 G Colonia Orquídea San Luís Potosí, SLP CP 78394 www.crc-mexico.com 52-444-824-1666

24-Hr Emergency - CHEMTREC: (800) 424-9300 or (703) 527-3887

Section 2: Hazards Identification

Emergency Overview

DANGER: Extremely Flammable. Harmful or Fatal if Swallowed. Contents Under Pressure. As defined by OSHA's Hazard Communication Standard, this product is hazardous. Appearance & Odor: Clear, light amber liquid with mild solvent odor

Potential Health Effects:

ACUTE EFFECTS:

- EYE: May cause mild irritation including stinging and redness, but does not injure eye.
- SKIN: Single, brief exposures may cause mild irritation. Frequent or prolonged contact may cause more severe irritation, defatting of the skin, and dermatitis.
- INHALATION: High vapor concentrations are irritating to the respiratory tract and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death. May cause peripheral nervous system disorder and/or damage.
- INGESTION: Low order of toxicity by ingestion. Main hazard is aspiration into the lungs during swallowing or vomiting. Small amounts aspirated into the respiratory system may cause bronchopneumonia or pulmonary adema, possibly progressing to death.
- CHRONIC EFFECTS: Overexposure to n-hexane may cause progressive and potentially irreversible damage to the peripheral nervous system, particularly in the arms and legs.
- TARGET ORGANS: Central nervous system, peripheral nervous system, respiratory system

Medical Conditions Aggravated by Exposure: skin and respiratory conditions

See Section 11 for toxicology and carcinogenicity information on product ingredients.

Section 3: Composition/Information on Ingredients

COMPONENT	CAS NUMBER	% by Wt.
Hexane isomers	107-83-5 / 64742-49-0	55 - 65
n-Hexane	110-54-3	4.4
Acrylic copolymer	proprietary	5 - 10
Molybdenum complex	72030-25-2 / 64742-52-5	< 1
Liquefied petroleum gas	68476-86-8	25 - 35

Section 4: First Aid Measures

Eye Contact:	Immediately flush with plenty of water for 15 minutes. Call a physician if irritation persists.
Skin Contact:	Remove contaminated clothing and wash affected area with soap and water. Call a physician if irritation persists. Wash contaminated clothing prior to re-use.
Inhalation:	Remove person to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call a physician.
Ingestion:	Do NOT induce vomiting. Contact a physician immediately.
Note to Physicians:	Treat symptomatically. Gastric lavage using a cuffed endotracheal tube may be performed at your discretion.

Section 5: Fire-Fighting Measures

Flammable Properties: This proc	luct is extremely flamm	nable in accordance with aerosol	flammability definitions.
(See 16	CFR 1500.3(c)(6)).		
Flash Point:	< 0°F (TCC)	Upper Explosive Limit:	9.0
Autoignition Temperature:	489°F	Lower Explosive Limit:	1.7

Fire and Explosion Data:

Suitable Extinguishing Media: Class B fire extinguishers, dry chemical, foam or CO₂

Products of Combustion: Fumes, smoke and carbon monoxide

Explosion Hazards: Aerosol containers, when exposed to heat from fire, may build pressure and explode. Vapors may accumulate in a confined space and create a flammable atmosphere.

Protection of Fire-Fighters: Firefighters should wear self-contained, NIOSH-approved breathing apparatus for protection against suffocation and possible toxic decomposition products. Proper eye and skin protection should be provided. Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition. Do not spray water directly on fire; product will float and could be reignited on surface of water.

Section 6: Accidental Release Measures

Personal Precautions: Use personal protection recommended in Section 8.

Environmental Precautions: Take precautions to prevent contamination of ground and surface waters. Do not flush into

sewers or storm drains.

Methods for Containment & Clean-up: Dike area to contain spill. Remove all sources of ignition. Ventilate the area with fresh air. If in confined space or limited air circulation area, clean-up workers should wear appropriate respiratory protection. Recover or absorb spilled material using an absorbent designed for chemical spills. Place used absorbents into proper waste containers.

Section 7: Handling and Storage

Handling Procedures:	Use proper grounding and bonding procedures for transferring materials. Do not use product near any source of ignition. Avoid contact with eyes and skin. Avoid breathing vapors. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. For product use instructions, please see the product label.
Storage Procedures:	Store in a cool dry area out of direct sunlight. Aerosol cans must be maintained below 120 F to prevent cans from rupturing.
Aerosol Storage Level:	III

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines:

	OS	SHA	AC	GIH	0	THER	
COMPONENT	TWA	STEL	TWA	STEL	TWA	SOURCE	UNIT
Hexane isomers	500(v)	1000(v)	500	1000	NE		ppm
n-Hexane	500	NE	50(s)	NE	NE		ppm
Acrylic copolymer	NE	NE	NE	NE	NE		
Molybdenum complex	NE	NE	NE	NE	NE		
Liquefied petroleum gas	1000	NE	1000	NE	NE		ppm
N.E. – Not Established		(c) – ceilin	g (s) –	- skin	(v) – vaca	ited	

Controls and Protection:

Engineering Controls:	Area should have ventilation to provide fresh air. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at the source, preventing dispersion into the general work area. Use mechanical means if necessary to maintain vapor levels below the exposure guidelines. If working in a confined space, follow applicable OSHA regulations.
Respiratory Protection:	None required for normal work where adequate ventilation is provided. If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with organic vapor cartridge. Air monitoring is needed to determine actual employee exposure levels. Use a self-contained breathing apparatus in confined spaces and for emergencies.
Eye/face Protection:	For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear splash-proof goggles.

Skin Protection: Use protective gloves such as nitrile, PVC or Viton. Also, use full protective clothing if there is prolonged or repeated contact of liquid with skin.

Section 9: Physical and Chemical Properties

Physical State: liquid				
Color: clear, light amber				
Odor: mild solvent				
Odor Threshold: ND				
Specific Gravity: 0.6771				
Initial Boiling Point: 140°F				
Freezing Point: < -76°F				
Vapor Pressure: 160 mmHg @ 68°F				
Vapor Density: > 1 (air = 1)				
Evaporation Rate: very fast				
Solubility: negligible in water				
Coefficient of water/oil distribution: ND				
pH: NA				
Volatile Organic Compounds: <u>wt %</u> : 92.1 <u>g</u>	<u>g/L</u> :	623.6	<u>lbs./gal</u> :	5.2

Section 10: Stability and Reactivity

Stability:	Stable		
Conditions to	Avoid:	Sources of ig	nition, temperature extremes
Incompatible	Materials:	Strong oxidiz	zers
Hazardous D	ecompositior	Products:	Oxides of carbon
Possibility of	Hazardous R	leactions:	No

Section 11: Toxicological Information

Long-term toxicological studies have not been conducted for this product. The following information is available for components of this product.

Acute Toxicity:

<u>Component</u>	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Hexane isomers	No data	No data	No data
n-Hexane	28,710 mg/kg	3000 mg/kg	48,000 ppm/4H
Acrylic copolymer	No data	No data	No data
Molybdenum complex	No data	No data	No data
Liquefied petroleum gas	No data	No data	No data

Product Name: Chain & Wire Rope Lube (aerosol) Product Number (s): 03050, 73050

	OSHA	IARC	NTP		
<u>Component</u>	Carcinogen	Carcinogen	Carcinogen	<u>Irritant</u>	<u>Sensitizer</u>
Hexane isomers	No	No	No	E (mild) / S (mild)	Unknown
n-Hexane	No	No	No	E (moderate) / S (moderate) / R (moderate)	Unknown
Acrylic copolymer	No	No	No	E (mild) / S (mild)	Unknown
Molybdenum complex	No	No	No	E (mild) / S (mild)	Unknown
Liquefied petroleum gas	No	No	No	No	No

E – Eye

S – Skin

R - Respiratory

Reproductive Toxicity:	No information available
Teratogenicity:	No information available
Mutagenicity:	No information available
Synergistic Effects:	No information available

Section 12: Ecological Information

Ecological studies have not been conducted for this product. The following information is available for components of this product.

Ecotoxicity:	n-hexane - 48 Hr EC50 water flea: 3.87 mg/L			
	96	Hr LC50 Lepomis macrochirus: 4.12 mg/L		
Persistence / Degradability:		No information available		
Bioaccumulation	Accumulation:	No information available		
Mobility in Enviror	nment:	No information available		

Section 13: Disposal Considerations

<u>Waste Classification</u>: The dispensed liquid product is a RCRA hazardous waste for the characteristic of ignitability with a waste code of D001. Pressurized containers are a D003 reactive waste. (See 40 CFR Part 261.20 – 261.33) Empty aerosol containers may be recycled. Any liquid product should be managed as a hazardous waste.

All disposal activities must comply with federal, state, provincial and local regulations. Local regulations may be more stringent than state, provincial or national requirements.

Section 14: Transport Information

US DOT (ground):	Consumer Commodity, ORM-D
ICAO/IATA (air):	Consumer Commodity, ID8000, 9
IMO/IMDG (water):	Aerosols, UN1950, 2.1, Limited Quantity
Special Provisions:	None

Section 15: Regulatory Information

U.S. Federal Regulations:

Toxic Substances Control Act (TSCA):

All ingredients are either listed on the TSCA inventory or are exempt.

<u>Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)</u>: Reportable Quantities (RQ's) exist for the following ingredients: n-hexane (5000 lbs)

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Superfund Amendments Reauthorization Act (SARA) Title III: Section 302 Extremely Hazardous Substances (EHS): None

Section 311/312 Hazard Categories:	Fire Hazard Reactive Hazard Release of Pressure Acute Health Hazard Chronic Health Hazard	Yes No Yes Yes Yes
	Chilonic Health Hazard	163

Section 313 Toxic Chemicals: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372: n-hexane (4.4%)

Clean Air Act:

Section 112 Hazardous Air Pollutants (HAPs): n-hexane

U.S. State Regulations:

<u>California Safe Drinking Water and Toxic Enforcement Act (Prop 65)</u>: This product may contain the following chemicals known to the state of California to cause cancer, birth defects or other reproductive harm: None

Consumer Products VOC Regulations: This product is not regulated.

State Right to Know:

 New Jersey:
 75-83-2, 110-54-3, 79-29-8, 68476-86-8

 Pennsylvania:
 107-83-5, 75-83-2, 110-54-3, 79-29-8, 68476-86-8

 Massachusetts:
 107-83-5, 75-83-2, 110-54-3, 79-29-8, 68476-86-8

 Rhode Island :
 110-54-3, 68476-86-8

Canadian Regulations:

Controlled Products Regulations:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Hazard Class: A, B5

Canadian DSL Inventory: All ingredients are either listed on the DSL Inventory or are exempt.

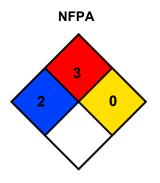
European Union Regulations:

<u>RoHS Compliance</u>: This product is compliant with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003. This product does not contain any of the restricted substances as listed in Article 4(1) of the RoHS Directive.

Additional Regulatory Information: None

Section 16: Other Information

HMIS® (II)		
Health:	2	
Flammability:	3	
Reactivity:	0	
PPE:	В	



Ratings range from 0 (no hazard) to 4 (severe hazard)

Prepared By:	Michelle Rudnick
CRC #:	572E
Revision Date:	05/05/2011

Section 9: Specific gravity and VOC Changes since last revision:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this MSDS consult your supervisor, a health & safety professional, or CRC Industries.

ACGIH:	American Conference of Governmental Industrial Hygienists	NA:	Not Applicable
CAS:	Chemical Abstract Service	ND:	Not Determined
CFR:	Code of Federal Regulations	NIOSH:	National Institute of Occupational Safety & Health
DOT:	Department of Transportation	NFPA:	National Fire Protection Association
DSL:	Domestic Substance List	NTP:	National Toxicology Program
g/L:	grams per Liter	OSHA:	Occupational Safety and Health Administration
HMIS:	Hazardous Materials Identification System	PMCC:	Pensky-Martens Closed Cup
IARC:	International Agency for Research on Cancer	PPE:	Personal Protection Equipment
IATA:	International Air Transport Association	ppm:	Parts per Million
ICAO:	International Civil Aviation Organization	RoHS:	Restriction of Hazardous Substances
IMDG:	International Maritime Dangerous Goods	STEL:	Short Term Exposure Limit
IMO:	International Maritime Organization	TCC:	Tag Closed Cup
lbs./gal:	pounds per gallon	TWA:	Time Weighted Average
LC:	Lethal Concentration	WHMIS:	Workplace Hazardous Materials Information
LD:	Lethal Dose		System



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHAMPION® MSDS 1800 SERIES ALCOHOL PRODUCTS

Synonyms:

4088 CHAMPION® RAINOFF 4089 CHAMPION® WINDSHEILD WASHER CONC 4091 CHAMPION® CLEAR METHANOL

4097 CHAMPION® BLUE METHANOL HM 4137 CHAMPION® AIR BRAKE & ANTIFREEZE 4303 CHAMPION® AUTO GLASS & SURFACE CLEANER

Company Identification

Champion Brands, L.L.C., 1001 Golden Drive, Clinton, MO 64735 PHONE: 800-821-5693 WEBSITE: <u>www.championbrands.com</u>

CAS Registry Number	Not Applicable
Synonyms	None
Generic/Chemical Name	Mixture
Product Type	Petroleum Based Lubricating Oil
Preparation Date	January 8, 2009
Transportation Emergency Re	esponse
CHEMTREC: (800) 424-9300	
Product Information	
Product Information and MSDS	Requests: (800) 821-5693 and www.championbrands.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT		
Methyl Alcohol	67561	0.0 - 100.0% weight		
Isopropanoi	67630	0.0 - 92.0% weight		
Additives, Non-hazardous	Mixture Secret	0.0 - 10.0% weight		

3. HAZARD IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Contact with the eyes causes severe irritation. Symptoms may include pain, tearing, reddening, swelling and impaired vision.

Skin: Toxic; may be harmful in contact with skin. Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Symptoms may include redness, burning, cracking, itching, and drying.

Ingestion: May be harmful if swallowed. Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea. **Inhalation:** Toxic; may be harmful or fatal if inhaled. The vapor or fumes from this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

Target Organs: Contains material that causes damage to the following organs if swallowed or inhaled at concentrations above the recommended exposure limit: red blood cells (hemolysis) Symptoms of hemolysis: nausea, vomiting, diarrhea, abdominal pain, dark urine and stool. Contains material that may cause damage to the following organ(s) if swallowed based on animal data: Eyes (cataracts) Contains material that may cause damage to the following organ(s) following repeated ingestion based on animal data: Liver Thyroid.

Cancer Information: Based on information currently available this material cannot be classified with regard to carcinogenicity.

See Section 11 for additional information. Risk depends on duration and level of exposure.

4. FIRST AID MEASURES

Eye: Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get immediate medical attention.

Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get immediate medical attention. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Inhalation: During an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

Note to Physicians: This material is an aspiration hazard. Potential danger from aspiration must be weighing against possible oral toxicity when deciding whether to induce vomiting.

5. FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as combustible.

NFPA RATINGS: Health: 1 Flammability: 3 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Pensky-Martens Closed Cup) > 11.0 °C (53.0 °F) Autoignition: No Data Available Flammability (Explosive) Limits (% by volume in air): Lower: > 2.0 Upper: < 36.0

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE INFORMATION

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator. **Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

7. HANDLING AND STORAGE

Precautionary Measures: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive force. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85F. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Wash thoroughly after handling. Do not breathe vapor or fumes. Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering,

mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

8. EXPOSURE CONTROL/PERSONAL PROTECTIVE EQUIPMENT

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted. **Skin Protection:** Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Silver Shield, Viton.

Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Occupational Exposure Limits:	Agency	TWA	STEL	Ceiling	Notation
Component					
Methanol	ACGIH	200 mg/m3	250 mg/m3		A3
Methanol	OSHA PEL/VPEL	200 mg/m3	250 mg/m3 -		[
	ACGIH	400 mg/m3	500 mg/m3 -	rhingspille i af glassjäll nefadirnas klefter (ind 14 ran. 1. met	
Isopropanol	OSHA PEL/VPEL	400 mg/m3	500 mg/m3 -		Skin

9. PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Appearance: Clear, Physical State: Liquid Odor: Mild Alcohol pH: No Data Vapor Pressure: < 97.68 mmHg @ 68.00°F Vapor Density (Air = 1): 1.11 - 2.07 Boiling Point: >147.0°F (63.8°C) @ 760mmHg Solubility: Soluble in Water Freezing Point: -128.0°F to -144.0°F (-88.0°C to -97.7°C) Specific Gravity: 0.789 – 0.792 @ 15.6°C (60°F) Viscosity: 0.6 - 2.4 cps

10. STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Avoid contact with acetaldehyde, acids, chlorine, ethylene oxide, isocyanates, strong oxidizing agents, calcium hypochlorite, zinc. Do not use with aluminum equipment > 120°F.

Hazardous Decomposition Products: May for carbon dioxide and carbon monoxide

Hazardous Polymerization: Hazardous polymerization will not occur.

11. TOXILOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components. **Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components. **Skin Sensitization:**

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION: No Data.

12. ECOLOGICAL INFORMATION

ECOTOXICITY

The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

ENVIRONMENTAL FATÉ

This material is not expected to be readily biodegradable.

13. DISPOSAL INFORMATION

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

14. TRANSPORTATION INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

Products in container sizes equal to, or less than, 1 QUART

	US DOT	Canada TDG
Shipping Name:	 Consumer Commodity 	FLAMMABLE LIQUID, N.O.S.
		contains (Methanol)
Hazard Class:	ORM-D	3(6.1)
UN Number:	N/A	UN1993
Packing Group:	N/A	11
Additional Info:	NONE	FLASHPOINT 11 C

Products in container sizes greater than one quart, but less than 55 GALLONS

Shipping Name: Hazard Class: UN Number: Packing Group: Additional Info: US DOT Methanol 3 UN 1230 II NONE

Canada TDG Methanol 3(6.1) UN1930 II FLASHPOINT 11 CMO/IMDG

Products in container sizes equal to, or greater, 55 GALLONS

Shipping Name: Hazard Class: UN Number: Packing Group: Additional Info: US DOT FLAMMABLE LIQUID, N.O.S. contains (Methanol) 3 UN1993 II NONE Canada TDG FLAMMABLE LIQUID, N.O.S. contains (Methanol) 3(6.1) UN1993 II FLASHPOINT 11 CMO/IMDG

15. REGULATORY INFORMATION

US FEDERAL

TSCA

CAS# 67-56-1 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 67-56-1: final RQ = 5000 pounds (2270 kg)

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 67-56-1: acute, flammable.

Section 313

This material contains Methyl alcohol (CAS# 67-56-1, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 67-56-1 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives Hazard Symbols:

ΤF

Risk Phrases:

R 11 Highly flammable. R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R 39/23/24/25 Toxic : danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.

S 36/37 Wear suitable protective clothing and gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 7 Keep container tightly closed.

WGK (Water Danger/Protection)

CAS# 67-56-1:1

Canada

CAS# 67-56-1 is listed on Canada's DSL List. CAS# 67-56-1 is listed on Canada's DSL List. This product has a WHMIS classification of B2, D1A, D2B.

CAS# 67-56-1 is listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 67-56-1: OEL-ARAB Republic of Eqypt:TWA 200 ppm (260 mg/m3);Ski n OEL-AUSTRALIA:TWA 200 ppm (260 mg/m3);STEL 250 ppm;Skin OEL-BELGIU M:TWA 200 ppm (262 mg/m3);STEL 250 ppm;Skin OEL-CZECHOSLOVAKIA:TWA 10 0 mg/m3;STEL 500 mg/m3 OEL-DENMARK:TWA 200 ppm (260 mg/m3);Skin OEL-FINLAND:TWA 200 ppm (260 mg/m3);STEL 250 ppm;Skin OEL-FRANCE:TWA 200 ppm (260 mg/m3);STEL 1000 ppm (1300 mg/m3) OEL-GERMANY:TWA 200 ppm (2 60 ma/m3):Skin OEL-HUNGARY:TWA 50 ma/m3;STEL 100 ma/m3;Skin JAN9 OEL -JAPAN:TWA 200 ppm (260 mg/m3);Skin OEL-THE NETHERLANDS:TWA 200 ppm (260 mg/m3);Skin OEL-THE PHILIPPINES:TWA 200 ppm (260 mg/m3) OEL-POLA ND:TWA 100 mg/m3 OEL-RUSSIA:TWA 200 ppm;STEL 5 mg/m3;Skin OEL-SWEDEN :TWA 200 ppm (250 mg/m3);STEL 250 ppm (350 mg/m3);Skin OEL-SWITZERLAN D;TWA 200 ppm (260 mg/m3);STEL 400 ppm;Skin OEL-THAILAND:TWA 200 ppm (260 mg/m3) OEL-TURKEY:TWA 200 ppm (260 mg/m3) OEL-UNITED KINGDOM:TW A 200 ppm (260 mg/m3);STEL 250 ppm;Skin OEL IN BULGARIA, COLOMBIA, JO RDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM ch eck ACGI TLV None.

16. DISCLAIMER

NFPA RATINGS:Health: 1Flammability: 3Reactivity: 0HMIS RATINGS:Health: 3Flammability: 3Reactivity: 0(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *-
Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the
National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).
REVISION STATEMENT: Revision updates many sections and the MSDS should be read in its entirety.

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CHA - Champion LLC	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by Champion LLC, 1001 Golden Drive, Clinton, Missouri 64735.

The information presented herein has been compiled from sources considered to be dependable and is accurate to the best knowledge of Champion Brands, L.L.C. Champion Brands, L.L.C., makes no warranty whatsoever expressed or implied of merchantability or fitness for the particular purpose, regarding the accuracy of such data or the results to be obtained from the use thereof. Champion Brands, L.L.C., assumes no legal responsibility for use or reliance upon this data. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier Chevron Clarity Synthetic Hydraulic Oil AW

Product Number(s): CPS255696

1.2 Relevant identified uses of the substance or mixture and uses advised against Identified Uses: Hydraulic Oil

1.3 Details of the supplier of the safety data sheet

Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com email : lubemsds@chevron.com

1.4 Emergency telephone number Transportation Emergency Response CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information Product Information: (800) LUBE TEK

SECTION 2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture DSD/DPD CLASSIFICATION: Not classified as dangerous according to EU regulatory guidelines.

2.2 Label elements Under the criteria of Directive 1999/45/EC (dangerous preparations): Not classified

2.3 Other hazards Not applicable.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Mixtures

This material is a mixture.

COMPONENTS	EC NUMBER	SYMBOL / RISK PHRASES	AMOUNT
Highly refined mineral oil (C15 - C50)	*	None	70 - 99 %weight

*Contains one or more of the following EINECS numbers: 265-090-8, 265-091-3, 265-096-0, 265-097-6, 265-098-1, 265-101-6, 265-155-0, 265-156-6, 265-157-1, 265-158-7, 265-159-2, 265-160-8, 265-161-3, 265-166-0, 265-169-7, 265-176-5, 276-735-8, 276-736-3, 276-737-9, 276-738-4, 278-012-2.

COMPONENTS	CAS NUMBER			CLP CLASSIFICATION	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	*	**	None	70 - 99 %weight

*Contains one or more of the following EINECS numbers: 265-090-8, 265-091-3, 265-096-0, 265-097-6, 265-098-1, 265-101-6, 265-155-0, 265-156-6, 265-157-1, 265-158-7, 265-159-2, 265-160-8, 265-161-3, 265-166-0, 265-169-7, 265-176-5, 276-735-8, 276-736-3, 276-737-9, 276-738-4, 278-012-2. **Not available or substance is not currently required for registration under REACH.

SECTION 4 FIRST AID MEASURES

4.1 Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

4.2 Most important symptoms and effects, both acute and delayed IMMEDIATE SYMPTOMS AND HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to be harmful. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Not classified.

4.3 Indication of any immediate medical attention and special treatment needed Not applicable.

SECTION 5 FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

5.2 Special hazards arising from the substance or mixture

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

5.3 Advice for firefighters

This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Eliminate all sources of ignition in vicinity of spilled material. Refer to Sections 5 and 8 for more information.

6.2 Environmental precautions

Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater.

6.3 Methods and material for containment and cleaning up

Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil and dispose of in a manner consistent with applicable requirements. Place other contaminated materials in disposable containers and dispose of in a manner consistent with applicable requirements. Report spills to local authorities as appropriate or required.

6.4 Reference to other sections

See sections 8 and 13.

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do not taste or swallow.

7.2 Conditions for safe storage, including any incompatibilities

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

7.3 Specific end use(s):Hydraulic Oil

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances. Refer to appropriate CEN standards.

8.1 Control parameters

No applicable occupational exposure limits exist for this material or its components. Consult local authorities for appropriate values.

8.2 Exposure controls

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

ENVIRONMENTAL EXPOSURE CONTROLS:

See relevant Community environmental protection legislation or the Annex, as applicable.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

9.1 Information on basic physical and chemical properties

Appearance Color: Colorless Physical State: Liquid Odor: Hydrocarbon odor Odor Threshold: No data available pH: No data available Melting Point: No data available Freezing Point: No data available Initial Boiling Point: 315°C (599°F) Minimum Flashpoint: (Cleveland Open Cup) 190 °C (374 °F) Minimum Evaporation Rate: No data available Flammability (solid, gas): No Data Available Flammability (solid, gas): No Data Available Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 Density: No data available Solubility: Soluble in hydrocarbons; insoluble in water Partition coefficient: n-octanol/water: No data available Auto-ignition temperature: No data available Decomposition temperature: No Data Available Viscosity: 36.4mm2/s @ 40°C (104°F) (Typical) Explosive Properties: No Data Available Oxidising properties: No Data Available 9.2 Other Information: No Data Available

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity: This material is not expected to react.

10.2 Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions: Hazardous polymerization will not occur.

10.4 Conditions to Avoid: Not applicable

10.5 Incompatible materials to avoid: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

10.6 Hazardous decomposition products: None known (None expected)

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material. **Carcinogenicity:** The hazard evaluation is based on data for components or a similar material. **Reproductive Toxicity:** The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

In accordance with the Directive 94/69/EC (21st ATP to DSD), Nota L, reference IP 346/92: "DMSO Extraction Method", we have determined that the base oils used in this preparation are not carcinogenic.

SECTION 12 ECOLOGICAL INFORMATION

12.1 Toxicity

This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

12.2 Persistence and degradability

This material is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

12.3 Bioaccumulative potential

Bioconcentration Factor: No Data Available Octanol/Water Partition Coefficient: No data available

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This product is not, or does not contain, a substance that is a potential PBT or a vPvB.

12.6 Other adverse effects

No other adverse effects identified.

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

In accordance with European Waste Catalogue (E.W.C.) the codification is the following: 13-02

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult appropriate Dangerous Goods Regulations for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

ADR/RID

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

- 14.1 UN number: Not applicable
- 14.2 UN proper shipping name: Not applicable
- 14.3 Transport hazard class(es): Not applicable
- 14.4 Packing group: Not applicable
- 14.5 Environmental hazards: Not applicable
- 14.6 Special precautions for user: Not applicable

ICAO

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

14.1 UN number: Not applicable

14.2 UN proper shipping name: Not applicable

14.3 Transport hazard class(es): Not applicable

14.4 Packing group: Not applicable

14.5 Environmental hazards: Not applicable

14.6 Special precautions for user: Not applicable

IMO

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

14.1 UN number: Not applicable

14.2 UN proper shipping name: Not applicable

14.3 Transport hazard class(es): Not applicable

14.4 Packing group: Not applicable

14.5 Environmental hazards: Not applicable

14.6 Special precautions for user: Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: Not applicable

SECTION 15 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture REGULATORY LISTS SEARCHED:

01=EU. Directive 76/769/EEC: Restrictions on the marketing and use of certain dangerous substances.

02=EU Directive 90/394/EEC: Carcinogens at work.

03=EU Directive 92/85/EEC: Pregnant or breastfeeding workers.

04=EU Directive 96/82/EC (Seveso II): Article 9.

05=EU Directive 96/82/EC (Seveso II): Articles 6 and 7.

06=EU Directive 98/24/EC: Chemical agents at work.

07=EU Directive 2004/37/EC: On the protection of workers.

08=EU Regulation EC No. 689/2008: Annex 1, Part 1.

09=EU Regulation EC No. 689/2008: Annex 1, Part 2.

10=EU Regulation EC No. 689/2008: Annex 1, Part 3.

11=EU Regulation EC No. 850/2004: Prohibiting and restricting persistant organic pollutants (POPs).

12=EU REACH, Annex XVII: Restrictions on manufacture, placing on the market and use of certain dangerous substances, mixture & article.

13=EU REACH, Annex XIV: Candidate List of Substances of Very High Concern for Authorization (SVHC).

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

15.2 Chemical safety assessment

No chemical safety assessment.

SECTION 16 OTHER INFORMATION

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1-16 **Prevision Data:** EERBLIARY 01, 2012

Revision Date: FEBRUARY 01, 2013

Full text of R-phrases: None Full text of CLP H-statements: None

_						
	TLV - Threshold Limit Value	TWA	-	Time Weighted Average		
	STEL - Short-term Exposure Limit	PEL	-	Permissible Exposure Limit		
	CVX - Chevron	CAS	-	Chemical Abstract Service Number		
	NQ - Not Quantifiable					

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

Prepared according to the criteria of EU Regulation 1907/2006 by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo 400 LE SAE 15W-40

Product Use: Diesel Engine Oil Product Number(s): 222220 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

Transportation Emergency Response CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information email : lubemsds@chevron.com Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight
Zinc alkyl dithiophosphate	68649-42-3	0.1 - < 2.5 %weight
01154100-5301P	Trade secret	0.1 - < 1 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and

flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed IMMEDIATE SYMPTOMS AND HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Not classified.

Indication of any immediate medical attention and special treatment needed Not applicable.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Keep out of the reach of children. Wash thoroughly after handling.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and

drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3			

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Brown Physical State: Liquid Odor: Petroleum odor Odor Threshold: No data available **pH:** Not Applicable Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 **Initial Boiling Point:** 315°C (599°F) **Solubility:** Soluble in hydrocarbons; insoluble in water Freezing Point: Not Applicable Melting Point: Not Applicable **Specific Gravity:** 0.87 - 0.9 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) **Density:** 0.8806 kg/l @ 15°C (59°F) (Typical) Viscosity: 15.3 mm2/s @ 100°C (212°F) (Min) Evaporation Rate: No data available **Decomposition temperature:** No Data Available Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available Flashpoint: (Cleveland Open Cup) 204 °C (399 °F) Minimum Autoignition: No data available Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: This material is not expected to react.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product

components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material. **Carcinogenicity:** The hazard evaluation is based on data for components or a similar material. **Reproductive Toxicity:** The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available. Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities

for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

- 1. Immediate (Acute) Health Effects:
- Delayed (Chronic) Health Effects: NO 2. NO

NO

NO

- 3. Fire Hazard:
- Sudden Release of Pressure Hazard: 4. NO
- Reactivity Hazard: 5.

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
Ũ	07=PA RTK

The following components of this material are found on the regulatory lists indicated. Zinc alkyl dithiophosphate 03.06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), KECI (Korea), PICCS (Philippines), TSCA (United States). One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : ENGINE OIL 1 - ENG1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1-16. **Revision Date:** MARCH 04, 2014

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Material Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

DELO EXTENDED LIFE COOLANT 50/50 - BITTERANT

Product Use: Antifreeze/Coolant Product Number(s): CPS227811 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

Transportation Emergency Response CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information email : lubemsds@chevron.com Product Information: (800) LUBE TEK

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Ethylene Glycol	107-21-1	30 - 60 %weight
Sodium 2-ethylhexanoate	19766-89-3	1 - 5 %weight

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- HARMFUL OR FATAL IF SWALLOWED

- CONTAINS MATERIAL THAT MAY CAUSE HARM TO THE UNBORN CHILD

- CONTAINS MATERIAL THAT MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS BASED ON ANIMAL DATA
- CAUSES DAMAGE TO:

- KIDNEY

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Toxic; may be harmful or fatal if swallowed.

Inhalation: The vapor or fumes from this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:

Reproduction and Birth Defects: Contains material that may cause adverse reproductive effects if swallowed based on animal data.Contains material that may be harmful to the developing fetus based on animal data.

Target Organs: Contains material that causes damage to the following organ(s) if swallowed: Kidney See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing is difficult, give oxygen. Get medical attention if breathing is difficulties continue.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 2

Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: Not Applicable Autoignition: No data available Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames. Dry Chemical, CO2, AFFF Foam or alcohol resistant foam.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling.

General Handling Information: Do not taste or swallow antifreeze or solution. Keep out of the reach of children and animals.

General Storage Information: Do not store in open or unlabeled containers.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Natural rubber, Neoprene, Nitrile Rubber, Polyvinyl Chloride (PVC or Vinyl).

Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an

approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors, Dusts and Mists.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Ethylene Glycol	ACGIH			100	
				mg/m3	

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Red Physical State: Liquid Odor: Faint or Mild pH: 8.1 - 8.5 Vapor Pressure: 0.12 mmHg (Typical) @ 20 °C (68 °F) Vapor Density (Air = 1): 2.1 Boiling Point: 108.9°C (228°F) Solubility: Miscible Freezing Point: -37°C (-34.6°F) Specific Gravity: 1.08 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) Viscosity: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: Ketones (Elevated temperatures), Aldehydes (Elevated temperatures)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains ethylene glycol (EG). The toxicity of EG via inhalation or skin contact is expected to be slight at room temperature. The estimated oral lethal dose is about 100 cc (3.3 oz.) for an adult human. Ethylene glycol is oxidized to oxalic acid which results in the deposition of calcium oxalate crystals mainly in the brain and kidneys. Early signs and symptoms of EG poisoning may resemble those of alcohol intoxication. Later, the victim may experience nausea, vomiting, weakness, abdominal and muscle pain, difficulty in breathing and decreased urine output. When EG was heated above the boiling point of water, vapors formed which reportedly caused unconsciousness, increased lymphocyte count, and a rapid, jerky movement of the eyes in persons chronically exposed. When EG was administered orally to pregnant rats and mice, there was an increase in fetal deaths and birth defects. Some of these effects occurred at doses that had no toxic effects on the mothers. We are not aware of any reports that EG causes reproductive toxicity in human beings.

2-Ethylhexanoic acid (2-EXA) caused an increase in liver size and enzyme levels when repeatedly administered to rats via the diet. When administered to pregnant rats by gavage or in drinking water, 2-EXA caused teratogenicity (birth defects) and delayed postnatal development of the pups. Additionally, 2-EXA impaired female fertility in rats. Birth defects were seen in the offspring of mice who were administered sodium 2-ethylhexanoate via intraperitoneal injection during pregnancy.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PROPRIETARY ANTIFREEZE PREPARATION IN NON-BULK PACKAGING; NOT REGULATED FOR TRANSPORT UNDER 49 CFR

Additional Information:Bulk shipments containing a reportable quantity (RQ, 5000 pounds or more) of ethylene glycol in a single packaging are transported as hazardous material. The shipping description is:

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL CONTAINS BITTERANT), 9, III, RQ (ETHYLENE GLYCOL)

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: Anti-freeze Preparations, Proprietary; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

- 1. Immediate (Acute) Health Effects:
- 2. Delayed (Chronic) Health Effects:
- 3. Fire Hazard:
- 4. Sudden Release of Pressure Hazard:

YES

YES

NO

NO

NO

- 5. Reactivity Hazard:
- 5. Redelivity 1/424

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	
01-2A=IARC Group 2A	
01-2B=IARC Group 2B	
02=NTP Carcinogen	
Ũ	

03=EPCRA 313 04=CA Proposition 65 05=MA RTK 06=NJ RTK 07=PA RTK

The following components of this material are found on the regulatory lists indicated. Ethylene Glycol 03, 05, 06, 07

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Refer to components listed in Section 2.

WHMIS CLASSIFICATION:

Class D, Division 1, Subdivision B: Toxic Material -Acute Lethality Class D, Division 2, Subdivision A: Very Toxic Material -Teratogenicity and Embryotoxicity Reproductive Toxicity

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 2 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 2* Flammability: 1 Reactivity: 0 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : ANTIFREEZE/COOLANT 3 - AFC3

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1,2,5,9,12,16 **Revision Date:** JULY 18, 2012

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Material Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Delo Syn-Gear XDM SAE 75W-90

Product Use: Gear Oil Product Number(s): 223030 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

Transportation Emergency Response CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information email : lubemsds@chevron.com Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	15 - 40 %weight

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- HARMFUL TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 100 °C (212 °F) Minimum
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Nitrogen .

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		

Highly refined mineral oil (C15 -	OSHA Z-1	5 mg/m3	 	
C50)				

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Amber Physical State: Liquid Odor: Petroleum odor pH: Not Applicable Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 Boiling Point: 315°C (599°F) Solubility: Soluble in hydrocarbons; insoluble in water Freezing Point: Not Applicable Specific Gravity: 0.865 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) (Typical) Density: 7.21 lb/gal @ 15.6°C (60°F) (Typical) Viscosity: 14.6 mm2/s @ 100°C (212°F) (Min) Evaporation Rate: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected) Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been

listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

- Immediate (Acute) Health Effects: 1.
- 2. Delaved (Chronic) Health Effects: NO NO

NO

- 3. Fire Hazard:
- 4. Sudden Release of Pressure Hazard: NO NO
- 5. Reactivity Hazard:

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1

03=EPCRA 313

01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
-	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: (Gear oil)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION	

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This is a new Safety Data Sheet. **Revision Date:** January 17, 2014

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Material Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

DELO® SYNTHETIC TRANSMISSION FLUID SAE 50

Product Use: Transmission Fluid Product Number(s): CPS221225 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

Transportation Emergency Response CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information email : lubemsds@chevron.com Product Information: (800) LUBE TEK

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

This material contains no ingredients requiring disclosure under the regulatory criteria for this jurisdiction.

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- HARMFUL TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if

left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a synthetic hydrocarbon oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs. **Note to Physicians:** In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 221 °C (430 °F) Minimum **Autoignition:** No data available **Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Nitrogen, Sulfur, Phosphorus .

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Natural rubber.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Varies depending on specification Physical State: Liquid Odor: Faint or Mild pH: Not Applicable Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 Boiling Point: 315°C (599°F) Solubility: 0.1 % Negligible 0.1 % Melting Point: No data available @ 15.6°C (60.1°F) Density: 0.86 kg/l @ 15°C (59°F) (Typical) Viscosity: 17 mm2/s - @ 100°C (212°F) Minimum Evaporation Rate: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.No product toxicology data available.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or

product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM OIL, N.E.C.; NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR **Additional Information:**NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER ICAO

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

- 1. Immediate (Acute) Health Effects:
- 2. Delayed (Chronic) Health Effects:
- Fire Hazard:
- 4. Sudden Release of Pressure Hazard: NO
- 5. Reactivity Hazard:

REGULATORY LISTS SEARCHED:

NO

NO

NO

NO

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
-	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: EINECS (European Union), IECSC (China), KECI (Korea), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), PICCS (Philippines).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Automatic transmission fluid)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16	OTHER INFORMATION
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NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 10 - IND10

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1-16

Revision Date: AUGUST 28, 2012

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental	IMO/IMDG - International Maritime Dangerous Goods
Industrial Hygienists	Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on	OSHA - Occupational Safety and Health Administration
Cancer	

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Drive Train Fluid HD

Product Use: Transmission Fluid

Product Number(s): CPS226601, CPS226607, CPS226608, CPS226610

Synonyms: Chevron Drive Train Fluid HD SAE 10W, Chevron Drive Train Fluid HD SAE 30, Chevron Drive Train Fluid HD SAE 50, Chevron Drive Train Fluid HD SAE 60

Company Identification

Chevron Products Company

a division of Chevron U.S.A. Inc.

6001 Bollinger Canyon Rd.

San Ramon, CA 94583

United States of America

www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com

Product Information: (800) LUBE TEK

MSDS Requests: (800) 414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	80 - 100 %weight
Zinc alkyl dithiophosphate	68649-42-3	1 - 5 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 190 °C (374 °F) Minimum

Autoignition: No Data Available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this

material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3			

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Varies depending on specification

Physical State: Liquid

Odor: Petroleum odor

pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)

Vapor Density (Air = 1): >1

Boiling Point: >315°C (599°F)

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable

Specific Gravity: 0.88 - 0.91 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)

Density: 0.87 - 0.89 kg/l @ 15°C (59°F)

Viscosity: 6 - 26 mm2/s @ 100°C (212°F)

Evaporation Rate: No Data Available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

Additional Information: NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; MAY BE REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO

- 2. Delayed (Chronic) Health Effects: NO
- 3. Fire Hazard: NO
- 4. Sudden Release of Pressure Hazard: NO
- 5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
-	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Zinc alkyl dithiophosphate

03, 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be

identified as follows: PETROLEUM OIL (Automatic transmission fluid)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1,3,9,11,12,16.

Revision Date: March 13, 2009

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
ARC - International Agency for Research on Cancer OSHA - Occupational Safety and Health Administra	

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.





SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Havoline Pro DS Full Synthetic Motor Oil SAE 0W-20, 5W-20, 5W-30, 10W-30

Product Use: Automotive Engine Oil Product Number(s): 223501, 223502, 223503, 223505 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

Transportation Emergency Response CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information email : lubemsds@chevron.com Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- HARMFUL TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation. **Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 200 °C (392 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with

applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3			

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Light to Brown Physical State: Liquid Odor: Petroleum odor pH: Not Applicable Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 Boiling Point: 315°C (599°F) Solubility: Soluble in hydrocarbons; insoluble in water Freezing Point: Not Applicable Specific Gravity: 7 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) (Typical) Density: 0.85 kg/l @ 15°C (59°F) (Typical) Viscosity: 41.6 - 63.2 mm2/s @ 40°C (104°F) Evaporation Rate: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar

materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3). During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects: NO NO

NO

NO

NO

- 2. Delayed (Chronic) Health Effects:
- 3. Fire Hazard:
- 4. Sudden Release of Pressure Hazard:
- 5. Reactivity Hazard:

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
-	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States). One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : ENGINE OIL 1 - ENG1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1,2,3,12,16

Revision Date: May 01, 2014

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average		
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit		
	CAS - Chemical Abstract Service Number		
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code		
API - American Petroleum Institute	MSDS - Material Safety Data Sheet		

CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.





SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Rando® HD

Product Use: Hydraulic Oil Product Number(s): CPS273277, CPS273278, CPS273279 Synonyms: Rando® HD ISO 32, Rando® HD ISO 46, Rando® HD ISO 68 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com Product Information: (800) LUBE TEK

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 100 %wt/wt

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause

respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 170 °C (338 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver

Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3			

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Yellow Physical State: Liquid Odor: Petroleum odor pH: Not Applicable Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 Boiling Point: >315 °C (599 °F) Solubility: Soluble in hydrocarbon solvents; insoluble in water. Freezing Point: Not Applicable Density: 0.87 kg/l @ 15 °C (59 °F) (Typical) Viscosity: 28.8 mm2/s @ 40 °C (104 °F) Minimum

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected) Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects:

Delayed (Chronic) Health Effects: NO

3. Fire Hazard:

2.

- 4. Sudden Release of Pressure Hazard:
- 5. Reactivity Hazard:

NO NO

NO

NO

REGULATORY LISTS SEAR	CHED:
01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Hydraulic oil)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1,2,9,16

Revision Date: FEBRUARY 16, 2012

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number

ACGIH - American Conference of Governmental	IMO/IMDG - International Maritime Dangerous Goods		
Industrial Hygienists	Code		
API - American Petroleum Institute	MSDS - Material Safety Data Sheet		
CVX - Chevron	NFPA - National Fire Protection Association (USA)		
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)		
IARC - International Agency for Research on	OSHA - Occupational Safety and Health		
Cancer	Administration		

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Material Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Supreme Motor Oil

Product Use: Engine Oil Product Number(s): 220013, 220135, 220155 Synonyms: Chevron Supreme Motor Oil SAE 10W-30, Chevron Supreme Motor Oil SAE 5W-20, Chevron Supreme Motor Oil SAE 5W-30 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information email : lubemsds@chevron.com Product Information: (800) LUBE TEK

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %wt/wt

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 200 °C (392 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3			

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Amber Physical State: Liquid Odor: Petroleum odor pH: Not Applicable Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 Boiling Point: 315°C (599°F) Solubility: Soluble in hydrocarbons; insoluble in water Freezing Point: Not Applicable Specific Gravity: 1 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) (Approximate) Density: 0.8599 kg/l @ 15°C (59°F) (Typical) Viscosity: 9.6 mm2/s @ 100°C (212°F) (Min) Evaporation Rate: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected) Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3). During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not

expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

- Immediate (Acute) Health Effects: NO 1. Delayed (Chronic) Health Effects: NO 2
 - Fire Hazard:
- 3. NO 4. Sudden Release of Pressure Hazard: NO
- 5. Reactivity Hazard:

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	
01-2A=IARC Group 2A	
01-2B=IARC Group 2B	
02=NTP Carcinogen	
•	

03=EPCRA 313 04=CA Proposition 65 05=MA RTK 06=NJ RTK 07=PA RTK

No components of this material were found on the regulatory lists above.

NO

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

One or more components does not comply with the following chemical inventory requirements: ENCS (Japan).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16	OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index

recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : ENGINE OIL 1 - ENG1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 15, 16 **Revision Date:** August 20, 2013

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.





SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Supreme Motor Oil

Product Use: Automotive Motor Oil Product Number(s): CPS220002, CPS220011, CPS220059, CPS220060 Synonyms: Chevron Supreme Motor Oil SAE 10W-40, Chevron Supreme Motor Oil SAE 20W-50, Chevron Supreme Motor Oil SAE 30, Chevron Supreme Motor Oil SAE 40 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com Product Information: (800) LUBE TEK

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 205 °C (401 °F) (Min)

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3			

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Amber Physical State: Liquid Odor: Petroleum odor pH: Not Applicable Vapor Pressure: <0.01 mmHg @ 100 °C (212 °F) Vapor Density (Air = 1): >1 Boiling Point: 315°C (599°F) Solubility: Soluble in hydrocarbons; insoluble in water Freezing Point: Not Applicable Specific Gravity: 0.885 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) (Typical) Viscosity: 9.9 mm2/s @ 100°C (212°F) (Min)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected) Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3). During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; MAY BE REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	 Immediate (Acute) Health Effects: Delayed (Chronic) Health Effects: Fire Hazard: Sudden Release of Pressure Hazard: Reactivity Hazard:	NO NO NO NO	

REGULATORY LISTS SEARCHED:01-1=IARC Group 1001-2A=IARC Group 2A001-2B=IARC Group 2B002=NTP Carcinogen0

03=EPCRA 313 04=CA Proposition 65 05=MA RTK 06=NJ RTK 07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), KECI (Korea), PICCS (Philippines), TSCA (United States). One or more components is listed on ELINCS (European Union). Secondary notification by the importer

may be required. All other components are listed or exempted from listing on EINECS.

One or more components does not comply with the following chemical inventory requirements: ENCS (Japan).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : ENGINE OIL 1 - ENG1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1-16

Revision Date: MARCH 14, 2012

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct

as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.





SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Tegra® Synthetic Gear Lubricant ISO Grades

Product Use: Gear Lubricant Product Number(s): CPS210452, CPS210453, CPS210454, CPS233916, CPS233917 Synonyms: Chevron Tegra® Synthetic Gear Lubricant ISO 150, Chevron Tegra® Synthetic Gear Lubricant ISO 220, Chevron Tegra® Synthetic Gear Lubricant ISO 320, Chevron Tegra® Synthetic Gear Lubricant ISO 460, Chevron Tegra® Synthetic Gear Lubricant ISO 680 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America

www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887 **Health Emergency** Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Predest in few effects

Product Information

email : lubemsds@chevron.com Product Information: (800) LUBE TEK

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	1 - 5 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a synthetic hydrocarbon oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at

airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (ASTM D92) 150 °C (302 °F) Minimum
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at

(800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3			

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless Physical State: Liquid Odor: Petroleum odor pH: Not Applicable Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 Boiling Point: >315 °C (599 °F) Solubility: Soluble in hydrocarbons; insoluble in water Freezing Point: Not Applicable Specific Gravity: 0.8468 - 0.8649 @ 15.6 °C (60.1 °F) Density: 0.846 - 0.869 kg/l @ 15 °C (59 °F) Viscosity: 88 mm2/s @ 40 °C (104 °F) Minimum Evaporation Rate: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected) Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM OIL, N.E.C.; NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR **Additional Information:**NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: MAY BE REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER ICAO

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

- Immediate (Acute) Health Effects:
 Delayed (Chronic) Health Effects:
 - NO NO

NO

NO

- 3. Fire Hazard:
- 4. Sudden Release of Pressure Hazard: NO
- 5. Reactivity Hazard:

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1
01-2A=IARC Group 2A
01-2B=IARC Group 2B
02=NTP Carcinogen

03=EPCRA 313 04=CA Proposition 65 05=MA RTK 06=NJ RTK

07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: (Gear oil)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 2,3,5,8,9,11,12,15,16. **Revision Date:** FEBRUARY 23, 2012

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on	OSHA - Occupational Safety and Health
Cancer	Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Section 1: PRODUCT & COMPANY IDENTIFICATION

Product Name: Crystal Simple Green[®] Industrial Cleaner & Degreaser Additional Names:

Manufacturer's Part Number: *Please refer to Section 16

Company: Sunshine Makers, Inc. 15922 Pacific Coast Highway Huntington Beach, CA 92649 USA Telephone: 800-228-0709 • 562-795-6000 Monday – Friday, 8am – 5pm PST Emergency Phone: Chem-Tel 24-Hour Emergency Service: 800-255-3924

Fax: 562-592-3830

<u>NFPA/HMIS Rating:</u> Health, Fire, Reactivity,

and Special = 0 = minimal

Section 2: HAZARDS IDENTIFICATION

Emergency Overview: This is a clear colorless to pale straw colored liquid no added odor. No expected health hazards.

Routes of Exposures: Eye Contact, Skin Contact, Inhalation

Potential Health Effects

 Eye Contact:
 Not expected to cause eye irritation.

 Skin Contact:
 Not expected to cause skin irritation.

 Ingestion:
 May cause upset stomach. See section 11.

 Inhalation:
 Not expected to cause respiratory irritation.

 Medical Conditions Aggravated by Exposure:
 Dermally sensitive users may experience dry skin.

 Target Organs:
 None.

 Environmental Effects:
 Not harmful.

This mixture is not considered Hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Percent by weight
Water	7732-18-5	≥ 87%
Ethoxylated Alcohol	68439-46-3	≤ 5%
Sodium Citrate	68-04-2	≤ 5%
Tetrasodium N, N-bis (carboxymethyl)-L-glutamate	51981-21-6	≤ 1%
Sodium Carbonate	497-19-8	≤ 1%
Citric Acid	77-92-9	≤ 1%

Section 4: FIRST AID MEASURES

- If Inhaled: If adverse effect occurs, move to fresh air.
- If on skin: If adverse effect occurs, rinse skin with water.
- If in eyes: If adverse effect occurs, flush eyes with water.
- If ingested: Drink plenty of water to dilute.

ANSI-Z400.1-2010

Section 5: FIRE FIGHTING MEASURES

Flammability:Non-flammable.Flash Point:No flash point seen at or below 212°F (100°C), ASTM D-93

Suitable Extinguishing Media:Use Dry chemical, CO2, water spray or "alcohol" foam.Extinguishing Media to Avoid:High volume jet water.Products of Combustion:In event of fire, fire created carbon oxides may be formed.Special Protective Equipment:Firefighters should wear self-contained breathing apparatus and full fire-fighting turn-
out gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protection recommended in section 8.

Environmental Precautions: Prevent runoff from entering drains, sewers or waterways.

Method for Containment: Dike or soak up with inert absorbent material.

Method for Clean Up: Dilute with water and rinse into sanitary sewer system or dispose into suitable container.

Section 7: HANDLING AND STORAGE

Handling: Ensure adequate ventilation. Keep out of reach of children. Keep away from heat, sparks, open flame and direct sunlight. Do not pierce any part of the container.

Storage: Keep container tightly closed. Keep in cool dry area. Avoid prolonged exposure to sunlight. Do not store at temperatures above 109°F (42.7°C). If separation occurs, mix the product for reconstitution.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limit Values:No components listed with TWA or STEL values under OSHA or ACGIH.**Engineering Controls:**Not applicable.

Exposure Controls:

Eye Contact:Use protective glasses if splashing or spray-back is likely.Respiratory:Use in well ventilated areas.Skin Contact:Dermal sensitive individuals should use protective gloves.General Hygiene Considerations:Wash thoroughly after handling and before eating or drinking.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Physical State:	Clear coloı Liquid	rless to pale straw liquid	Odor: Odor T	hreshold:	No added odor – fai Not available	nt detergent smell
Boiling Point ASTM D Freezing Point ASTM Specific Gravity AST Evaporation Rate AS Vapor Pressure ASTM Vapor Density: pH ASTM D-1293:	D-1177: M D-891: STM D-1901:	101°C (213.8°F) 0 - 3.33°C (32 - 38°F) 1.01 – 1.03 ½ Butyl Acetate @ 25°C 0.60 psi @77°F, 2.05 psi @ Not applicable 9.0 – 10.5	100°F	Flammabil Autoigniti	on Temperature: Sition Temperature: TM D-4017: Subility:	Not applicable Not applicable Not applicable Not applicable 8.552 lb/gal 100% Not available

Section 9: PHYSICAL AND CHEMICAL PROPERTIES - continued

VOCs: 0 lb/gal 0% SCAQMD 304-91 / EPA 24: 0 g/LCARB Method 310**: 4 g/L 0.03 lb/gal 0.4% SCAQMD Method 313: Not tested

VOC composite Partial Pressure: Not Determined

Nutrient Content: Phosphorous: 0.0%

Section 10: STABILITY AND REACTIVITY

Stable under normal conditions 70°F (21°C) and 14.7 psig (760 mmHg). Stability:

Reactivity: Non-Reactive.

Conditions to Avoid: None known.

Incompatible Materials: None known.

Hazardous Decomposition Products: Normal products of combustion - CO, CO2.

Possibility of Hazardous Reactions: None known.

Section 11: TOXICOLOGICAL INFORMATION

Effects of Exposure: Not expected to be hazardous under typical use conditions.

Acute Toxicity: > 5 g/kg body weightOral LD₅₀ (rat) Dermal LD₅₀ (rabbit) > 5 g/kg body weight calculated via OECD Harmonized Integrated Classification System for Human Health & Environmental Hazards of Chemical Substances & Mixtures

Carcinogens: No ingredients are listed by OSHA, IARC, or NTP as known or suspected carcinogens.

Minimal irritant per Ocular Irritection[®] assay modeling. No animal testing performed. Eyes: Non-irritant per Dermal Irritection[®] assay modeling. No animal testing performed. Skin:

Section 12: ECOLOGICAL INFORMATION

Aquatic Toxicity: Low, based on OECD 201, 202, 203 + Microtox: EC₅₀ & IC₅₀ ≥100 mg/L.

Terrestrial Toxicity: Low, based on toxicology profile.

Readily Biodegradable per OECD 301D, Closed Bottle Test. Persistence and degradability: No data available. Mobility: Bioaccumulation: Not applicable.

Section 13: DISPOSAL CONSIDERATIONS

Appropriate Method for Disposal:

Unused Product: *Dilute with water and dispose by sanitary sewer. Used Product: *Used product may be hazardous depending on the cleaning application and resulting contaminants.

*Triple-rinse with water and offer for recycling if available in your area. **Empty Containers:**

*Dispose of used or unused product, and empty containers in accordance with the local, State, Provincial, and Federal regulations for your location. Never dispose of used degreasing rinsates into lakes, streams, and open bodies of water or storm drains.

**Water and Fragrance exemption in calculation

Supersedes Date: January 1, 2013

Section 14: TRANSPORT INFORMATION

U.S. (DOT) / Canadian TDG: Not Regulated for shipping. IMO / IDMG: Not classified as Hazardous ICAO/ IATA: Not classified as Hazardous ADR/RID: Not classified as Hazardous

U.N. Number: Not applicable Proper Shipping Name: Hazard Class: Non-Hazardous Marine Pollutant:

Detergent/Cleaning Solution No

Section 15: REGULATORY INFORMATION

All components are listed on: EINECS, TSCA, DSL, AICS and NZIOC Inventory.

SARA Title III: Sections 311/312 – Not applicable. Sections 313 – Not applicable. Sections 302 – Not applicable.

State Right To Know	<u>Lists</u> No ingred	ients listed.		
<u>CA Prop 65:</u>	None liste	d.		
Texas ESL:				
Ethoxylated Alcohol	68439-46-3	60 μg/m3 long term	600 μg/m3 short term	
Sodium Citrate	68-04-2	5 μg/m3 long term	50 μg/m3 short term	
Sodium Carbonate	497-19-8	5 μg/m3 long term	50 μg/m3 short term	
Citric Acid	77-92-9	10 μg/m3 long term	100 μg/m3 short term	
WHMIS Classification	n – Non Hazardou	s, not classifiable.		

Name	Toxic Substances List – Schedule 1 – CEPA	NPRI Inventory
No	No	No

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by Canada's Controlled Products Regulation.

Section 16: OTHER INFORMATION

PART NUMBERS: 0610001219024 0610000619128 0600000119005	SIZES: 24 ounce Trigger Spray 12/case 1-gallon Bottle 6/case 5-gallon Pail each	BATCH CODING: Containers of this formula will be batch coded as follows: Example: <i>AT3001002, GG3001002</i> where <i>AT</i> & <i>GG</i> are codes for production facilities, "3" is the last digit of the year product was produced,
0600000119005 0600000119055	•	"3" is the last digit of the year product was produced,
0600000119033	275-gallon Tote each	<i>"001"</i> is the Julian date product was produced, and <i>"002"</i> is the batch number for that product in that year.

USA part numbers listed only. Not all part numbers listed. USA part numbers may not be valid for international sale.

Prepared / Revised By: Sunshine Makers, Inc., Regulatory Department. This SDS has been revised in the following sections: pH range readjusted.

DISCLAIMER: The information provided with this MSDS is furnished in good faith and without warranty of any kind. Personnel handling this material must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of this material and the safety and health of employees and customers. Sunshine Makers, Inc. assumes no additional liability or responsibility resulting from the use of, or reliance on this information.

PRODUCT NAME: CRYSTAL WINDSHIELD WASHER -25° HMIS CODES: H F R P 1 3 0 1 PRODUCT CODE: F00156 MANUFACTURER'S NAME: CRYSTAL PACKAGING, INC. ADDRESS : 5185 NATIONAL WESTERN DRIVE DENVER, CO 80216
 EMERGENCY PHONE
 : (800)
 535-5053
 DATE PRINTED
 : 03/14/08

 INFORMATION PHONE
 : (303)
 778-1805
 NAME OF PREPARER
 : CEB
 ====== SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION ======== VAPOR PRESSURE WEIGHT 35% REPORTABLE COMPONENTS METHANOL CAS NUMBER mm Hg @ TEMP PERCENT _____ 67-56-1 96.0000068.00000100 * METHANOL OSHA PEL: 200ppmTWA, ACGIH TLV: 200ppmTWA, OTHER: 250ppmSTEL * Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372. N/A SPECIFIC GRAVITY (H2O=1): 0.90 EVAPORATION RATE: FASTER THAN ETHEN **BOILING RANGE:** 178° F **EVAPORATION RATE:** FASTER THAN ETHER VAPOR DENSITY: HEAVIER THAN AIR SOLUBILITY IN WATER: 100% APPEARANCE AND ODOR: CLEAR-BLUE IN COLOR, SWEET PUNGENT ODOR FLASH POINT: 94° F. METHOD USED: TCC FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: 5.50000 UPPER: 36.50000 EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL SPECIAL FIREFIGHTING PROCEDURES: WATER SPRAY ACCEPTABLE EXTINGUISHING MEDIA, FLAME MAY BE INVISIBLE IN DAYLIGHT UNUSUAL FIRE AND EXPLOSION HAZARDS: THIS PRODUCT WILL NOT SUPPORT COMBUSTION OR CONTINUOUS SPONTANEOUS COMBUSTION **STABILITY:** STABLE CONDITIONS TO AVOID: STRONG OXIDIZING AGENTS, EXCESSIVE HEAT AND IGNITION SOURCES INCOMPATIBILITY (MATERIALS TO AVOID) STRONG OXIDIZERS, CHROMIC ANYHDRIDE, LEAD PERCHLORATE, PERCHLORIC ACIDS HAZARDOUS DECOMPOSITION OR BYPRODUCTS: OCCURS FROM HEAT AND REACTION WITH ABOVE STATED MATERIALS HAZARDOUS POLYMERIZATION: WILL NOT OCCUR INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: PROLONGED INHALATION OF VAPORS MAY CAUSE DIZZINESS, NAUSEA, VISUAL IMPAIRMENT RESPIRATORY FAILURE, MUSCULAR INCOORDINATION AND NARCOSIS. INHALATION OF HIGH CONCENTRATION HAS RESULTED IN DEATH. LIVER DAMAGE CAN OCCUR FROM LONG EXPOSURE. SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE: ESSENTIALLY NON-IRRITATING TO SKIN. PROLONGED EXPOSURE CAN CAUSE DRYING, BRITTLENESS, CRACKING AND IRRITATION. MAY CAUSE EYE INJURY WHICH MAY PERSIST FOR SEVERAL DAYS. INCLUDES TEARING, BURNING, AND IRRITATION. SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: PROLONGED EXPOSURE CAN CAUSE DRYING, BRITTLENESS, CRACKING AND IRRITATION. ESSENTIALLY NON-IRRITATING SHORT TERM. INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: POISONOUS IF SWALLOWED. CAN AFFECT THE OPTIC NERVE RESULTING IN BLINDNESS. CAN CAUSE MENTAL SLUGGISHNESS, NAUSEA AND VOMITTING LEADING TO SEVERE ILLNESS, POSSIBLY DEATH (IN HUMANS). PRACTICALLY NON-TOXIC TO ANIMALS.

MATERIAL SAFETY DATA SHEET

CRYSTAL WINDSHIELD WASHER -25°

HEALTH HAZARDS (ACUTE AND CHRONIC): SWALLOWING POSES ACUTE HAZARD CARCINOGENICITY: NTP CARCINOGEN: NO IARC MONOGRAPHS: NO OSHA REGULATED: NO NON CARCINOGENIC

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: MAY AGGRIVATE EXISTING EYE, SKIN, KIDNEY AND LIVER DISORDERS.

EMERGENCY AND FIRST AID PROCEDURES: INHALATION - REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT ADMINISTER OXYGEN. SKIN EXPOSURE - REMOVE CONTAMINATED CLOTTING AND WASH CONTAMINATED SKIN WITH LARGE AMOUNTS OF WATER. IF IRRITATION PERSISTS, CALL A PHYSICIAN. EYE EXPOSURE - FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES. CONTACT PHYSICIAN IF IRRITATION PERSISTS. INJESTION - INDUCE VOMITTING BY GIVING TWO GLASSES WATER THEN PRESSING FINGER DOWN THROAT. DRINK MORE WATER, MILK OR SODIUM BICARBINATE TO DILUTE MATERIAL IN STOMACH. CONTACT PHYSICIAN IMMEDIATELY.

WASTE DISPOSAL METHOD: THIS PRODUCT WHEN SPILLED OR DISPOSED IS A HAZARDOUS WASTE. PREFERRED METHOD IN INCINERATION OR BIOLOGICAL TREATMENT IN FEDERAL/STATE APPROVED FACILITY.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: USE ONLY N WELL VENTILATED AREA. KEEP AWAY FROM HEAT AND FLAME. USE ONLY FOR INTENDED PURPOSES STORE IN A COOL PLACE AWAY FROM HEAT AND SOURCES OF IGNITION. KEEP AWAY FROM CHILDREN

OTHER PRECAUTIONS: CANNOT BE MADE NOT-POISONOUS. BE SURE AUTOMOBILE WINDSHEILD WASHER SYSTEM IN WHICH THIS PRODUCT IS USED IS IN GOOD OPERATING CONDITION.

EXAMPLE 2 SECTION VIII - CONTROL MEASURES EXAMPLE 2 EXAMPLE

RESPIRATORY PROTECTION: PROVIDE ADEQUATE VENTILATION OR EXHAUST TO MEET THV/PEL REQUIREMENTS. SUPPLIED AIR OR SELF-CONTAINED BREATHING EQUIPMENT RECOMMENDED FOR EXPOSURES ABOVE THE PEL. ORGANIC VAPOR CARTRIDGE RESPIRATORS NOT RECOMMENDED FOR METHANOL VAPOR EXPOSURE.

VENTILATION: PROVIDE ADEQUATE VENTILATION OR EXHAUST TO MEET TLV/PEL REQUIREMENTS. SUPPLIED AIR OR SELF-CONTAINED BREATHING EQUIPMENT RECOMMENDED FOR EXPOSURES ABOVE THE PEL. ORGANIC VAPOR CARTRIDGE RESPIRATORS NOT RECOMMENDED FOR METHANOL VAPOR EXPOSURE. **PROTECTIVE GLOVES:** GLOVES AND PROTECTIVE APRONS OR CLOTHING SHOULD BE USED TO PREVENT SKIN CONTACT.

EYE PROTECTION: HAVE AVAILABLE AND WEAR AS APPROPRIATE SPLASH GOGGLES OR SAFETY GLASSES WITH SIDE SHIELD PROTECTORS.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: EYE WASH AND SAFETY SHOWER RECOMMENDED IN AREA OF USE. WASH WITH SOAP AND WATER IMMEDIATELY AFTER SKIN CONTACT.

WORK/HYGIENIC PRACTICES: MONITORING OF AIR IN THE WORKPLACE IS RECOMMENDED TO MAINTAIN METHANOL VAPORS BELOW TLV

THIS INFORMATION RELATES ONLY TO THE MATERIAL DESIGNED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF THIS COMPANY'S KNOWLEDGE BELIEVED TO BE ACCURATE AND RELIABLE AS OF THE DATE INDICATED. NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO ITS ACCURACY.



MATERIAL SAFETY DATA SHEET CUT CAT, CUT CAT FAST, CUT CAT EXTRA FAST- PURe

Rev. 08/2012

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: CUT CAT, CUT CAT FAST, CUT CAT EXTRA FAST - PURe

MANUFACTURER:	de neef Construction Chemicals Inc.
ADDRESS:	5610 Brystone Drive
	Houston, TX 77095
PHONE:	(800) 732-0166 (7am-5pm CST Weekdays)
FAX:	(713) 849-3340
WEBSITE:	www.deneef.com

EMERGENCY PHONE: CHEMTREC (800) 424-9300 (Anytime) Outside US: 1-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

DANGER: Irritating to eyes and skin

APPEARANCE AND ODOR: Red colored liquid with a slightly musty / amine odor.

REACTIVE: Avoid acids, chlorine and oxidizers.

POTENTIAL HEALTH EFFECTS

EYES:

Can cause eye irritation. Prolonged exposure to eyes can cause chemical burns. Uncontrolled vapor exposure may cause severe pain or serious damage to eye..

SKIN:

Can cause skin irritation. Prolonged exposure to skin can cause chemical burns. Exposure can cause latent burns. Heated product may cause thermal burns if contacted.

INGESTION: Small amounts may cause injury.

INHALATION: Prolonged or repeated high level exposures may cause severe irritation of respiratory passages and/or lung congestion.

CAS NO.	<u>% wt/wt</u>
trade secret	20-60%

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MATERIAL SAFETY DATA SHEET CUT CAT, CUT CAT FAST, CUT CAT EXTRA FAST- PURe

Rev. 08/2012

SECTION 4: FIRST AID MEASURES

EYES:

Immediately flush eyes gently with water for at least 15 minutes, while holding open upper and lower lids. Immediately seek medical attention.

SKIN:

Immediately wash thoroughly with mild soap and water. If available, use an appropriate decontamination skin cleanser. Remove contaminated clothing and wash before reuse. Destroy contaminated shoes. Immediately obtain medical attention.

INGESTION:

SEEK IMMEDIATE MEDICAL ATTENTION! DELAYED TREATMENT MAY RESULT IN FATALITY. Do not induce vomiting. If victim is fully conscious, dilute stomach contents with large amounts of milk or water. Never give anything by mouth to an unconscious person. Immediately call a physician.

INHALATION:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Immediately get medical attention.

SECTION 5: FIRE-FIGHTING MEASURES

Flash Point: ASTM D93 158°F (70°C) (closed cup)

EXTINGUISHING MEDIA: Dry Chemical, CO₂, Foam or Water Fog

SPECIAL FIRE FIGHTING PROCEDURES: A MSHA/NIOSH approved self-contained breathing apparatus should be worn. Do not scatter material with high pressure water streams.

HAZARDOUS DECOMPOSITION PRODUCTS: Fire or intense heat will decompose the product into acrid smoke and fumes.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES:

Where exposure level is known, wear approved respirator suitable for the level of exposure. If exposure level is unknown, wear approved, positive pressure, self-contained respirator. In addition to the protective clothing in Section 8, wear impermeable boots. Prevent from reaching waterways.

CLEAN-UP PROCEDURES:

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MATERIAL SAFETY DATA SHEET CUT CAT, CUT CAT FAST, CUT CAT EXTRA FAST- PURe

Rev. 08/2012

Remove sources of ignition. Dike and contain the spill with inert material and transfer liquid and solid diking material to separate containers for recovery or disposal. Wash floor area with hot water solution. Remove contaminated clothing and wash before reuse. Wash affected skin areas with soap and water. Keep spills out of all sewers and bodies of water.

SECTION 7: HANDLING AND STORAGE

HANDLING:

Avoid skin and eye contact. Wash thoroughly after handling. Keep product away from heat and open flame. Handle in accordance with good hygiene and safety procedures. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Since empty containers contain product residue and can be dangerous, follow all hazard warnings and precautions even after container is emptied. Keep away from sources of ignition.

STORAGE:

Maintain storage temperatures between 65°F to 86°F (18°C to 30°C). Do not allow product to freeze. Do not use if previously frozen. Store in original closed containers in a cool, dry, well-ventilated area. Store separately from all combustible, organic and oxidizable materials. Keep from contact with oxidizing materials. Containers should be kept tightly closed and stored in a dry well-ventilated place

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Local exhaust: preferred. Mechanical: may be necessary if working at elevated temperatures or in enclosed areas.

RESPIRATORY PROTECTION:

Use an appropriate NIOSH/MSHA approved respirator for exposure to contaminated atmosphere. A NIOSH/MSHA approved self-contained breathing apparatus or air-supplied respirator is recommended if the concentration exceeds the capacity of cartridge respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

EYE PROTECTION: Safety goggles or face shield

SKIN PROTECTION: Protective gloves: Rubber or plastic depending upon degree of potential exposure, additional personal protective equipment may be required, such as chemical boots and full protective clothing.

WORK HYGIENIC PRACTICES: Use good hygiene practices when handling this material including changing and laundering of work clothes after use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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APPEARANCE: Clear red liquid ODOR: Musty, amine odor ODOR THRESHOLD: Not available PHYSICAL STATE: Liquid pH: alkaline MELTING/ FREEZING PT: Not available FLASH POINT: 158°F (70°C) EVAPORATION RATE: Not available FLAMMABILITY: Not available UPPER FLAMMABILITY LIMITS: Not available BOILING POINT: >356°F (180°C) LOWER FLAMMABILITY LIMITS: Not available VAPOR PRESSURE: <1mm Hg @ 77°F VAPOR DENSITY: <0.1 BULK DENSITY: 8.48 lbs/gal SOLUBILITY (H₂O): limited PARTITION COEFFICIENT: Not available AUTO-IGNITION TEMPERATURE: not available SPECIFIC GRAVITY (H₂O=1) 0.95 DECOMPOSITION TEMPERATURE: Not available

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID (STABILITY): High temperatures

INCOMPATIBILITY (MATERIAL TO AVOID): Aluminum, lead sodium hypochlorite, organic acids, mineral acids, reactive metals, materials with hydroxyl compounds, alkalis, oxidizers.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Carbon dioxide and carbon monoxide, nitrogen oxides, flammable hydrocarbon fragments.

HAZARDOUS POLYMERIZATION:

Does not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

ACCUTE TOXICITY Oral LD50 (rat) >2000 mg/kg Inhalation LC50 (rat) > 15mg/L/4hrs Dermal LD50 (rabbit): >2000 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Not expected to bioaccumulate In high amounts this product can be dangerous for surface waters. This product has limited water solubility.

SECTION 13: DISPOSAL CONSIDERATIONS

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MATERIAL SAFETY DATA SHEET CUT CAT, CUT CAT FAST, CUT CAT EXTRA FAST- PURe

Rev. 08/2012

Waste Disposal Method

Do not allow into drains or waterways or where ground water or surface waters may be affected. Ensure any containers containing waste material are correctly labeled.

Waste disposal should be in accordance with existing federal, state and local environmental control laws.

Empty Container Precautions

Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal. Dispose of per local, state and federal guidelines as required by your specific local. This product when used with urethane resin to produce foam <u>in its cured foam state</u> is inert and non-toxic.

4

SECTION 14: TRANSPORT INFORMATION

This product is not classified as dangerous goods according to transport regulations.

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS All components are listed in or exempt from TSCA WHMIS: All components are listed on the CEPA Domestic Substances List (DSL)

NFPA HAZARD CLASSIFICATION: HEALTH: 2 FLAMMABILITY: 2 REACTIVITY: 0 HMIS: HEALTH: 2 FLAMMABILITY: 2 PHYSICAL HAZARD: 0

SECTION 16: OTHER INFORMATION

PREPARATION INFORMATION: AUGUST 2012 This MSDS is on a three year review cycle. If the date on this sheet is older than three years please contact *de neef* Construction Chemicals Inc. for an updated MSDS.

DISCLAIMER:

All information appearing herein is based on manufacturer and/ or recognized technical sources. While the information is believed accurate *de neef* Construction Chemicals Inc. makes no representations as to the accuracy or sufficiency of the information.

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th deneef CONSTRUCTION CHEMICALS, INC.

MATERIAL SAFETY DATA SHEET CUT PURe Rev. 01/2012

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: CUT PURe

MANUFACTURER	: de neef Construction Chemicals Inc.
ADDRESS:	5610 Brystone Drive
•	Houston, TX 77095
PHONE:	(800) 732-0166 (7am-5pm CST Weekdays)
FAX:	(713) 849-3340
WEBSITE:	www.deneef.com

EMERGENCY PHONE: CHEMTREC (800) 424-9300 (Anytime) Outside US: 1-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

APPEARANCE AND ODOR: Honey colored liquid with a slightly musty odor. REACTIVE: Product will polymerize when exposed to water.

POTENTIAL HEALTH EFFECTS

EYES: Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing. Product may polymerize in eye.

CHRONIC EYE: Prolonged vapor contact may cause conjunctivitis

SKIN:

Causes irritation with symptoms of reddening, itching, and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Contact with skin can cause product to polymerize. Cured material is difficult to remove. Contact with MDI can cause discoloration.

CHRONIC SKIN: Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests on MDI indicate skin contact alone may lead to an allergic respiratory reaction.

INGESTION:

May cause irritation; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea. Carcinogenicity: No Carcinogenic substances as defined by IARC, NTP and/or OSHA

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SECTION 2: HAZARDS IDENTIFICATION (Continued)

INHALATION:

Diisocyanate vapors or mist can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction).

CHRONIC INHALATION

As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates (asthma or asthma-like symptoms).

SECTION 3: HAZARDOUS INGREDIENTS		·
Name	CAS NO.	<u>% wt/wt</u>
4,4'-Diphenylmethane Diisocyanate (MDI) and homologues of MDI	101-68-8 9016-87-9	16-20

SECTION 4: FIRST AID MEASURES

EYES: Immediately flush eyes gently with water for at least 15 minutes, while holding open upper and lower lids. Product reacts with moisture in eye! Immediately seek medical attention.

SKIN: Remove contaminated clothing. Blot or brush the product away, prior to washing the exposed area with water. The cured product on the skin is rarely a cause of irritation (If it does, seek medical attention). The process of trying to remove the cured product may cause irritation.

INGESTION: SEEK IMMEDIATE MEDICAL ATTENTION! DELAYED TREATMENT MAY RESULT IN FATALITY. Do Not Induce Vomiting. Rinse mouth out with water. Aspiration of material into the lungs due to vomiting can cause chemical pneumonitis which can be fatal.

INHALATION: Move to an area free from further exposure. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours. Extreme asthmatic reactions can be life threatening.

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SECTION 5: FIRE-FIGHTING MEASURES (ERG CODE 171)

FLASH POINT & METHOD USED: ASTM D93 293°F (145°C)

EXTINGUISHING MEDIA:

Dry Chemical, CO₂, Foam or Water Fog

SPECIAL FIRE FIGHTING PROCEDURES:

Do not scatter material with high pressure water streams. Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO2 formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

HAZARDOUS DECOMPOSITION PRODUCTS:

Fire or intense heat will decompose the product into CO₂, CO, Hydrogen Cyanide, Oxides of Nitrogen, Isocyanates, Isocyanic Acid, and dense black smoke.

SECTION 6: ACCIDENTAL RELEASE MEASURES (ERG CODE 171)

ACCIDENTAL RELEASE MEASURES: Where exposure level is known, wear approved respirator suitable for the level of exposure. If exposure level is unknown, wear approved, positive pressure, self-contained respirator. In addition to the protective clothing in section 8, wear impermeable boots.

CLEAN-UP PROCEDURES: Remove sources of ignition. Stop and contain / dam the spill. Absorb spill with inert material (vermiculite / diatomaceous earth). Shovel material into appropriate container for disposal.

SECTION 7: HANDLING AND STORAGE

HANDLING:

Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation.

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exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

STORAGE:

Keep in manufacturer's sealed nitrogen packed pail. Maintain storage temperatures between 65°F to 86°F (18°C to 30°C).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

4.4'- Diphenylmethane Diisocyanate:

ACGIH PEL-TWA: 0.005 ppm NIOSH Ceilina: 0.02ppm at 10 minutes OSHA PEL (vacated)CEILING: 0.02 ppm, 0.2mg/m³

ENGINEERING CONTROLS:

Normal room ventilation is usually adequate under normal use. Local exhaust should be used to maintain levels below the TLV whenever MDI is heated, sprayed, or aerosolized. Standard reference sources regarding industrial ventilation (e.g., ACGIH Industrial Ventilation Manual) should be consulted for guidance about adequate ventilation. To ensure that published exposure limits have not been exceeded, monitoring for airborne diisocyanate should become part of the overall employee exposure characterization program.

INHALATION:

Diisocyanate vapors or mist at concentrations above the TLV or PEL can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyper reactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the TLV or PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

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CHRONIC INHALATION

As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates at levels well below the TLV or PEL. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could

CHRONIC INHALATION (CONTINUED)

be immediate or delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

RESPIRATORY PROTECTION:

Airborne MDI concentrations greater than the ACGIH TLV-TWA (TLV) or OSHA PEL-C (PEL) can occur in inadequately ventilated environments when MDI is sprayed, aerosolized, or heated. In such cases, respiratory protection must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) an atmosphere-supplying respirator such as a selfcontained breathing apparatus (SCBA) or a supplied air respirator (SAR) in the positive pressure or continuous flow mode, or (2) an air-purifying respirator (APR). If an APR is selected then (a) the cartridge must be equipped with an end-of-service life indicator (ESLI) certified by NIOSH, or(b) a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in the written respirator program. Further, if an APR is selected, the airborne diisocyanate concentration must be no greater than 10 times the TLV or PEL. The recommended APR cartridge is an organic vapor/particulate filter combination cartridge (OV/P100).

EYE PROTECTION: Safety goggles or face shield

SKIN PROTECTION: Use gloves; wear protective clothing to prevent skin contact. In cured form, the product is difficult to remove from skin and hair.

WORK HYGIENIC PRACTICES: Use good hygiene practices when handling this material including changing and laundering of work clothes after use.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Dark Brown Liquid ODOR: Slightly musty odor ODOR THRESHOLD: Not available PHYSICAL STATE: Liquid pH: Neutral MELTING PT: <- 4°F (<- 20°C) FLASH POINT (CC):293°F (145°C) EVAPORATION RATE: Not available FLAMMABILITY: Non-flammable UPPER FLAMMABILITY LIMITS: Not Applicable

LOWER FLAMMABILITY LIMITS: Not applicable VAPOR PRESSURE: 0.0006 mm Hg @ 40°C SPECIFIC GRAVITY (H₂O=1): 1.05-1.10 BULK DENSITY: 8.76-9.3 lbs/gal SOLUBILITY (H₂O): None PARTITION COEFFICIENT: Not available AUTO-IGNITION TEMPERATURE: Not available DECOMPOSITION TEMPERATURE:

<212°F(<100°Ċ)

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Contact with moisture or temperatures above 350° F (177° C) will cause polymerization.

CONDITIONS TO AVOID (STABILITY): Will polymerize with heat and/or moisture. INCOMPATIBILITY (MATERIAL TO AVOID): Amines, Strong Bases, Alcohols, Copper Alloys, Liquid Chlorine. Water- until ready to react.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Fire or intense heat will decompose the product into CO₂, CO, Hydrogen Cyanide, Oxides of Nitrogen, Isocyanates, Isocyanic Acid, and dense black smoke.

During normal polymerization CO₂ is produced.

HAZARDOUS POLYMERIZATION: During normal polymerization CO₂ is produced.

SECTION 11: TOXICOLOGICAL INFORMATION	
CARCINOGENICITY: 4,4'-DiphenyImethane Diisocyanate IARC: Group 3 (not classifiable as to its carcinogenicity in humans)	
EPA- CBD MAK: 4	
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ACUTE TOXICITY

4,4'-Diphenylmethane Diisocyanate

Oral LD50 (rat) >5800 mg/kg Inhalation LC50 (rat) : 14ppm/4hrs Dermal LD50 (rabbit) : >16 mL/kg

SECTION 12: ECOLOGICAL INFORMATION

Does not Bioaccumulate (All Ingredients)

Biodegrade to 0% in 28 days (4,4'- Diphenylmethane Diisocyanate)

Biodegrade to 70% compressive strength in 80 years (cured foam state)

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method

Waste disposal should be in accordance with existing federal, state and local environmental control laws. Incineration is the preferred method.

Empty Container Precautions

Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal. Dispose of per local, state and federal guidelines as required by your specific local. This product <u>in its cured foam state</u> is inert and non-toxic.

SECTION 14 TRANSPORT INFORMATION

Not regulated for transportation

		A		
		SA	RA	
TSCA	CERCLA	302	313	
	RQ			
Yes	5000 lbs	No	Yes	
			TSCA CERCLA 302 RQ	RQ

TSCA: All ingredients are listed in or exempt from the TSCA Master Inventory File 5610 Brystone Dr. Houston, Texas 77041 Ph: 713/896-0123 • Fax: 713/849-3340 • <u>www.deneef.com</u> PAGE 7 OF 8 Construction Chemicals, Inc.

MATERIAL SAFETY DATA SHEET CUT PURe Rev. 01/2012

WHMIS:

All ingredients are listed on the CEPA Domestic Substances List (DSL)

Ingredient Disclosure List (IDL), the following components are on the list:

4,4 - Diphenylmethane Diisocyanate 101-68-8

SECTION 16: OTHER INFORMATION

NFPA HAZARD CLASSIFICATION:

HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 1 HMIS:

HEALTH: 2 FLAMMABILITY: 1 PHYSICAL HAZARD: 1

Do not use this product unless trained to do so.

PREPARATION INFORMATION:

January, 2012

This MSDS is on a three year review cycle. If the date on this sheet is older than three years please contact *de neef* Construction Chemicals Inc. for an updated MSDS. DISCLAIMER:

All information appearing herein is based on manufacturer and/ or recognized technical sources. While the information is believed accurate *de neef* Construction Chemicals Inc. makes no representations as to the accuracy or sufficiency of the information.

DD 2000

SECTION I – Product Identification		
MANUFACTURER'S NAME:	Control Chemical (1989) Corporation	
MANUFACTURER'S ADDRESS:	7016, 30 th Street S.E.	
	Calgary, Alberta, Canada	
	T2C 1N9	
EMERGENCY PHONE NUMBER:	(403) 720-7044	
SUPPLIER IDENTIFIER:		
SUPPLIER'S ADDRESS:		
SUPPLIER'S EMERGENCY PHONE NUMBER:		
PRODUCT IDENTIFIER:	DD 2000	
PRODUCT USE:	Drilling mud – Co-polymer of Acrylamide and Sodium	
	Acrylate	
	lous Ingredients of Materials	
Chemical Identity Concentration	CAS#/NA#/UN# LD (50) LC (50)	
No regulated components.		
This is not a WHMIS controlled product.		
SECTION III – P	hysical Data for Product	
PHYSICAL STATE:	Solid	
ODOUR AND APPEARANCE:	Granular white solid. Faint odour	
ODOUR THRESHOLD:	Not available	
SPECIFIC GRAVITY:	0.80	
VAPOR PRESSURE:	Very low	
VAPOR DENSITY (Air = 1):	Not available	
EVAPORATION RATE:	Not available	
POILING POINT:	Decomposes	
FREEZING POINT:	Not available	
pH:	Not available	
DENSITY (g/ml):	0.80	
COEFFICIENT OF WATER / OIL		
DISTRIBUTION:	Not available	
SECTION IV – Fire and	I Explosion Hazard of Product	
CONDITIONS OF FLAMMABILITY:	Requires a source of ignition, the presence of air, and a	
	temperature greater than the flash point.	
MEANS OF EXTINCTION:	Use dry chemical, foam, or carbon dioxide. Water may cause excessive slipperiness	
FLASHPOINT AND METHOD OF	eause excessive supportiess	
DETERMINATION:	No flash point	
UPPER EXPLOSION LIMIT (% by Vol):	No flash point Not available	
· · ·	Not available	
LOWER EXPLOSION LIMIT (% by Vol):		

DD 2000

AUTO-IGNITION TEMPERATURE:	Not available
FLAMMABILITY CLASSIFICATION:	Not available. Not a controlled product.
HAZARDOUS COMBUSTION PRODUCTS:	Not available
EXPLOSION DATA:	Not available
SENSITIVITY TO STATIC DISCHARGE:	Not available
SECTION V	/ – Reactivity Data
CHEMICAL STABILITY:	Stable under normal conditions. Hazardous
	polymerization will not occur
INCOMPATIBLE MATERIALS:	Avoid strong oxidizing and reducing agents.
CONDITIONS OF REACTIVITY:	Avoid contamination with reactive substances
HAZARDOUS DECOMPOSITION PRODUCTS:	Not available
	logical Properties of Product
ROUTES OF ENTRY:	
SKIN CONTACT:	No effects of exposure expected due to contact.
	Prolonged contact may cause skin irritation or dermatitis
	in some individuals.
SKIN ABSORBTION:	No known hazard due to skin absorption
EYE:	No effects of exposure expected with the exception of
	possible irritation
INHALATION:	May cause sneezing, slight irritation of nose and throat
INGESTION:	
ACUTE OVER EXPOSURE EFFECTS:	
CHRONIC OVER EXPOSURE EFFECTS:	Skin irritation or dermatitis may occur upon frequent or
	prolonged contact.
EXPOSURE LIMITS:	TWAEV = 0.03 mg/m^3 (skin) (Ont. Reg. 654/86).
IRRITANCY OF PRODUCT:	Eye: mild irritant.
SENSITIZATION TO MATERIAL:	Repeated or prolonged contact may cause sensitization
	in some individuals
CARCINOGENICITY, REPRODUCTIVE	
EFFECTS:	
TERATOGENICITY, MUTAGENICITY:	Not available
TOXICOLOGICALLY SYNERGISTIC	
PRODUCTS:	Not available
	- Preventive Measures
PERSONAL PROTECTIVE EQUIPMENT:	Chemical goggles, impervious gloves, and protective
	clothing as required to prevent contact. Use a
	mechanical-filter respirator as required to prevent
	exposure.
SPECIFIC ENGINEERING CONTROLS:	General ventilation with a good source of make-up air
	un a a mun an dia di tan a li un da an aitra ti ana

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recommended for all indoor situations

DD 2000

LEAK AND SPILL PROCEDURES:	Ventilate area. Wear rubber boots, gloves, and a self -contained breathing apparatus if ventilation is not adequate. Collect into waste container. Avoid raising dust. Wash spill site after material pickup. Water solutions are very slippery. May constitute a hazard following a spill
WASTE DISPOSAL:	Dispose of waste according to Federal, Provincial, and Municipal regulations.
HANDLING PROCEDURES AND EQUIPMENT	: Avoid prolonged or frequent contact when handling material. Do not inhale dust or breathe vapor. Wear a NIOSH approved mechanical-filter respirator, if adequate ventilation cannot be provided. Avoid skin or
STORAGE REQUIREMENTS:	eye contact. Keep container closed when not in use. Store in cool and dry location away from oxidizing and reducing agents.
SPECIAL SHIPPING INFORMATION:	None

SECTION VIII – First Aid Measures		
SPECIFIC FIRST AID PROCEDURES:	Skin contact: wash exposed area with soap and water. If irritation or abnormalities persist, call a physician. Eye contact: Immediately flush eyes with water for 15 minutes and call a physician. Inhalation: remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician. Ingestion: do not induce vomiting. If conscious, dilute by giving two glasses of water. Call a physician immediately.	

SECTION X – Preparation Date of Material Safety Data Sheet		
PREPARED BY:	Safety Committee	
PHONE NUMBER OF PREPARER:	(403) 720-7044	
DATE PREPARED:	January 02, 2009	

The information contained herein is based on data believed to be reliable, but is presented without guarantee or warranty and Control Chemical (1989) Corporation disclaims any liability incurred from the use thereof.

DD XPAND

SECTION I	– Product Identification
MANUFACTURER'S NAME:	Control Chemical (1989) Corporation
MANUFACTURER'S ADDRESS:	7016, 30 th Street S.E.
	Calgary, Alberta, Canada
	T2C 1N9
EMERGENCY PHONE NUMBER:	(403) 720-7044
CHEMICAL IDENTIFIER:	Polyacrylamide
SUPPLIER'S ADDRESS:	
SUPPLIER'S EMERGENCY PHONE NUMBE	R:
PRODUCT IDENTIFIER:	DD XPAND
PRODUCT USE:	Loss circulation and Plug Additive
SECTION II – Haza	ardous Ingredients of Materials
Chemical Identity Concentration	CAS#/NA#/UN# LD (50) LC (50)
Free acrylamide	
Not a WHMIS con	trolled product
SECTION III -	- Physical Data for Product
PHYSICAL STATE:	White granular crystals
ODOUR AND APPEARANCE:	White granular crystals. No odour.
ODOUR THRESHOLD:	
SPECIFIC GRAVITY:	08 @ 25 degrees Celcius
VAPOR PRESSURE:	Not applicable
VAPOR DENSITY (Air = 1):	Not applicable
EVAPORATION RATE:	
POILING POINT:	Not applicable
FREEZING POINT:	
pH:	
DENSITY (g/ml):	
COEFFICIENT OF WATER / OIL	
DISTRIBUTION:	
SECTION IV – Fire a	and Explosion Hazard of Product
CONDITIONS OF FLAMMABILITY:	
MEANS OF EXTINCTION:	Dry chemical, carbon dioxide
FLASHPOINT AND METHOD OF	
DETERMINATION:	> 93 degress Celcius C.C.
UPPER EXPLOSION LIMIT (% by Vol):	N/E
LOWER EXPLOSION LIMIT (% by Vol):	N/E
AUTO-IGNITION TEMPERATURE:	
FLAMMABILITY CLASSIFICATION:	Will burn
HAZARDOUS COMBUSTION PRODUCTS:	Oxides of nitrogen and carbon

Oxides of nitrogen and carbon

EXPLOSION DATA:

SENSITIVITY TO STATIC DISCHARGE:

DD XPAND

SECTION V – Reactivity Data

CHEMICAL STABILITY:StableINCOMPATIBLE MATERIALS:Water, ICONDITIONS OF REACTIVITY:HAZARDOUS DECOMPOSITION PRODUCTS:None

Water, before use

SECTION VI – Toxicological Properties of Product

ROUTES OF ENTRY: SKIN CONTACT: SKIN ABSORBTION: EYE: **INHALATION: INGESTION:** ACUTE OVER EXPOSURE EFFECTS: CHRONIC OVER EXPOSURE EFFECTS: **EXPOSURE LIMITS: IRRITANCY OF PRODUCT:** SENSITIZATION TO MATERIAL: CARCINOGENICITY, REPRODUCTIVE **EFFECTS**: TERATOGENICITY, MUTAGENICITY: TOXICOLOGICALLY SYNERGISTIC **PRODUCTS**:

SECTION VII – Preventive Measures		
PERSONAL PROTECTIVE EQUIPMENT:	For respiratory protection: Dust mask. Safety glasses recommended	
SPECIFIC ENGINEERING CONTROLS:		
LEAK AND SPILL PROCEDURES:		
WASTE DISPOSAL:	Consult local, state of Federal authorities	
HANDLING PROCEDURES AND EQUIPMENT	;	
STORAGE REQUIREMENTS:		
SPECIAL SHIPPING INFORMATION:	Not T.D.G. controlled	

SECTION VIII – First Aid Measures		
SPECIFIC FIRST AID PROCEDURES:	Flush eyes with water. Rinse contaminated skin with soap and water. In case of discomfort by vapors or dusts, move to a ventilated area.	

DD XPAND

SECTION X – Preparation Date of Material Safety Data Sheet

PREPARED BY: PHONE NUMBER OF PREPARER: DATE PREPARED: Safety Committee (403) 720-7044 January 02, 2007

The information contained herein is based on data believed to be reliable, but is presented without guarantee or warranty and Control Chemical (1989) Corporation disclaims any liability incurred from the use thereof.



MSDS No. 10435	Trade Name:	D-D*	Revision Date: 07/18/2011
1.	CHEMICAL PRO	DUCT	AND COMPANY IDENTIFICATION

Trade Name:	D-D*				
Chemical Family: Product Use:	Mixture Drilling fluid	additive. Lubricant.			
Supplied by: Telephone Number: Emergency Telephone (2 Prepared by:	M-I L.L.C. P.O. Box 42 Houston, T> www.miswa 281-561-15 24 hr.): 281-561-16 Product Saf	X 77242 aco.slb.com 11 00			
Revision No.	8				
HMIS Rating Health: 2	Flammability: 1	Physical Hazard: 0	PPE:	J	

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

2. HAZARDS IDENTIFICATION

Emergency Overview:		Warning! May cause severe eye irritation. May cause skin irritation.				
Canadian Class UN PIN No:	ification: Not regulated.		WHMIS	S Class: D2B		
Physical State:	Liquid	Color:	Green	Odor:	Lemon	
Potential Health Acute Effects Eye Conta Skin Cont Inhalation	act: act: :	May be irritatir Not expected t however, may	to be an inhalation cause irritation.		halation of vapors or mists, jested.	
Carcinogenicity Effects: Routes of Expo Target Organs/I Conditions Agg Overexposure:	sure: Medical	Eyes. Dermal	1 - Toxicological I (skin) contact. Inł espiratory System	nalation.		

Trade Name: D-D*

MSDS No. 10435

Revision Date: 07/18/2011

COMPOSITION/INFORMATION ON INGREDIENTS 3.

Ingredient	CAS No.	Wt. %	Comments:
Non-hazardous component		60 - 100	No comments.
Alkanolamide		1 - 5	No comments.
Sodium salt		1 - 5	No comments.
Isopropyl alcohol	67-63-0	1 - 5	No comments.

Composition Comments:

Component LD50 and LC50 values are provided in Section 11, if available.

4. FIRST AID MEASURES

Eye Contact:	Promptly wash eyes with lots of water while lifting eye lids. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
General notes:	Persons seeking medical attention should carry a copy of this MSDS with them.

FIRE FIGHTING MEASURES 5.

Flammable Properties

Flash Point: F (C):	>200F (93C)
Flash Point Method:	CC
Flammable Limits in Air - Lower (%):	ND
Flammable Limits in Air - Upper (%):	ND
Autoignition Temperature: F (C):	ND
Explosion Data - Sensitivity to Mechanical Impact:	NA
Explosion Data - Sensitivity to Static Discharge:	If applicable, information is provided in Section 5 Special Fire-Fighting Procedures, Other Flammable Properties and Section 6 Spill Procedures.
Flammability Class: Extinguishing Media:	IIIB Water fog, carbon dioxide, foam, dry chemical.

Protection Of Fire-Fighters:

Special Fire-Fighting Procedures: Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Oxides of: Sulfur. Carbon. Nitrogen. Sodium.

Trade Name: D-D* Revision Date: 07/18/2011

MSDS No. 10435

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Conditions of Flammability: Products are classified as flammable/combustible based on flash point as defined in the Health Canada Controlled Products Regulations, U.S. Occupational Health and Safety Administration Hazard Communication Standard and transportation regulations. See Sections 1, 2, 5, 14 and 15 for flammable/combustible classification information. Flammable/combustible materials may ignite and burn if exposed to a flame or other sources of ignition.

Other Flammable Properties: ND

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Use personal protective equipment identified in Section 8.
Spill Procedures:	Evacuate the spill area with the exception of the spill response team. Keep personnel removed and upwind of spill. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Shut off leak if it can be done safely. Contain spilled material. Do not allow spilled material to enter sewers, storm drains or surface waters. Absorb in vermiculite, dry sand or earth. Place into containers for disposal.
Environmental Precautions:	Waste must be disposed of in accordance with federal, state and local laws. In the U.S., for products with reportable quanitity (RQ) components - if the RQ is exceeded, report to National Spill Response Office at 1 800 424 8802.

7. HANDLING AND STORAGE

Handling:Put on appropriate personal protective equipment. Avoid contact with skin and eyes.
Avoid breathing vapors or spray mists. Use only in a well ventilated area. Wash
thoroughly after handling.

Storage:Store in dry, well-ventilated area. Keep container closed. Keep away from heat,
sparks and flames. Store away from incompatibles. Follow safe warehousing
practices regarding palletizing, banding, shrink-wrapping and/or stacking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Non-hazardous component		60 - 100	NA	NA	NA	None
Alkanolamide		1 - 5	NA	NA	NA	None
Sodium salt		1 - 5	NA	NA	NA	(1)
Isopropyl alcohol	67-63-0	1 - 5	200 ppm, 400	400 ppm	2000 ppm	None
			ppm (STEL)		IDLH	
					(NIOSH)	

Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable).

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

Personal Protection Equipment

Trade Name: D-D*

MSDS No. 10435

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All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

Eye/Face Protection:	Wear chemical safety goggles.
Skin Protection:	Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as nitrile or neoprene.
Respiratory Protection:	All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent. If exposed to airborne mist/aerosol of this product, use an organic vapor cartridge with a P-95 pre-filter attached. In work environments containing oil mist/aerosol, use an organic vapor cartridge with a P-95 pre-filter attached.
	If exposed to vapors from this product, use a NIOSH/MSHA-approved respirator with an organic vapor cartridge.

General Hygiene Considerations: Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Green
Odor:	Lemon
Physical State:	Liquid
pH:	8.2 (1% solution)
Specific Gravity (H2O = 1):	1.01 - 1.02 at 68F (20C)
Solubility (Water):	Soluble
Flash Point: F (C):	>200F (93C)
Melting/Freezing Point:	ND
Boiling Point:	210F (99C)
Vapor Pressure:	ND
Vapor Density (Air=1):	ND
Evaporation Rate:	ND
Octanol/Water Partition	ND
Coefficient:	
Odor Threshold(s):	ND

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable
Conditions to Avoid:	Keep away from heat, sparks and flame.
Materials to Avoid:	Oxidizers.
Conditions of Reactivity:	See Conditions and Materials to Avoid, if applicable.
Hazardous Decomposition	For thermal decomposition products, see Section 5.
Products:	
Hazardous Polymerization	Will not occur

11. TOXICOLOGICAL INFORMATION

Trade Name: D-D*

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Acute Exposure Effects, Irritation and Sensitization: See Section 2. Chronic, Carcinogenicity, Reproductive Toxicity, Teratogenicity, Embryotoxicity, Mutagenicity Effects: See Component Toxicological Summary and Product Toxicological Information, if available. Synergistic Products/Effects: ND

Component Toxicological Data: Any adverse component toxicological effects and acute toxicity values (LD50s, LC50s) are listed below. If no effects or acute values are listed for components, no such data were identified.

Ingredient	CAS No.	Acute Data
Sodium salt		Oral LD50: 6600 mg/kg (rat); Dermal LD50: >7940 mg/kg (rabbit); Eye
		Irritation: 1.3/11.0 (rabbit); Skin Irritation 24H: 0.0/8.0 (rabbit)
Isopropyl alcohol	67-63-0	Oral LD50: >4720 mg/kg; Dermal LD50: >12,900 mg/kg (rabbit);
		Inhalation LC50: 12,000 ppm/8H (rat)

Product Toxicological Information: No toxicological data is available for this product.

12. **ECOLOGICAL INFORMATION**

Component Ecotoxicity Data:

Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

Ingredient	CAS No.	Data
Alkanolamide		LC50 96H: 2.3 mg/l (Scenedesmus acutus); LC50 96H: 5.4 mg/l
		(Brachydanio rerio); EC50 24H: 5.4 mg/l (Daphnia magna)
Isopropyl alcohol	67-63-0	LC50 96H: 94,900 mg/l (fathead minnow 29D old); LC50 96H: 61,200
		mg/l (fathead minnow 31D old); EC50 5M: 35,390 mg/l (Photobacterium
		phosphoreum)

Product Ecotoxicity Data:	Contact M-I Environmental Affairs Department for available product ecotoxicity data.
Biodegration:	ND
Bioaccumulation:	ND

DISPOSAL CONSIDERATIONS 13.

Waste Classification:	ND
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

TRANSPORT INFORMATION 14.

Trade Name: D-D*

MSDS No. 10435

Revision Date: 07/18/2011

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Canada TDG Shipping Description: UN PIN No: IMDG Shipping Description: ICAO/IATA Shipping Description: Not regulated. Not regulated. Not regulated. Not regulated.

15. REGULATORY INFORMATION

U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Immediate (acute) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro. F	CA 65 Repro. M
Sodium salt			5000 lb (2270 kg)				
Isopropyl alcohol		1.0%					

International Chemical Inventories

Australia AICS - Components are listed or exempt from listing. Canada DSL - Components are listed or exempt from listing. China Inventory - Contains a component that is not listed. European Union EINECS/ELINCS - Components are listed or exempt from listing. Japan METI ENCS - Contains a component that is not listed. Korea TCCL ECL - Contains a component that is not listed. New Zealand - Components are listed or exempt from listing. Philippine PICCS - Contains a component that is not listed. U.S. TSCA - Components are listed or exempt from listing.

U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: D2B

16. OTHER INFORMATION

The following sections have been revised: 1, 2, 3, 8, 16. Format changes.

NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

Trade Name: D-D* Revision Date: 07/18/2011

MSDS No. 10435

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Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Havoline® DEX-COOL® Extended Life Anti-Freeze/Coolant

Product Use: Antifreeze Product Number(s): CPS227994 Company Identification ChevronTexaco Global Lubricants 6001 Bollinger Canyon Road San Ramon, CA 94583 United States of America

Transportation Emergency Response CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information email : lubemsds@chevrontexaco.com Product Information: 800-LUBE-TEK MSDS Requests: 800-414-6737



SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Ethylene Glycol	107-21-1	80 - 97 %weight
Diethylene glycol	111-46-6	1 - 5 %weight
Potassium 2-ethylhexanoate	3164-85-0	1 - 5 %weight

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- HARMFUL OR FATAL IF SWALLOWED

- CONTAINS MATERIAL THAT MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS BASED ON ANIMAL DATA

- POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL THAT MAY CAUSE BIRTH DEFECTS BASED ON ANIMAL DATA

- MAY CAUSE DAMAGE TO:

- KIDNEY

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Toxic; may be harmful or fatal if swallowed.

Inhalation: The vapor or fumes from this material may cause respiratory irritation. Symptoms of respiratory

irritation may include coughing and difficulty breathing. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:

Reproduction and Birth Defects: Contains material that may cause adverse reproductive effects based on animal data. Contains material that may cause birth defects based on animal data.

Target Organs: Contains material that may cause damage to the following organ(s) following repeated ingestion based on animal data: Kidney

See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 2 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Pensky-Martens Closed Cup) 127 °C (260 °F) Autoignition: 400 °C (752 °F) Flammability (Explosive) Limits (% by volume in air): Lower: 3.2 Upper:

EXTINGUISHING MEDIA: Dry Chemical, CO2, AFFF Foam or alcohol resistant foam.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Potassium .

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not breathe vapor or fumes. Wash thoroughly after handling. General Handling Information: Do not taste or swallow antifreeze or solution. Keep out of the reach of children and animals.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

General Storage Information: Do not store in open or unlabeled containers.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Natural rubber, Neoprene, Nitrile Rubber, Polyvinyl Chloride (PVC or Vinyl).

Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors, Dusts and Mists.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	STEL	Ceiling	Notation
Ethylene Glycol	ACGIH		100 mm m/mm 2	

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Orange Physical State: Liquid Odor: Faint or Mild pH: 8 - 8.6 Vapor Pressure: <0.01 mmHg @ 20 °C (68 °F) Vapor Density (Air = 1): 2.1 Boiling Point: 108.9°C (228°F) (Typical) Solubility: Miscible Freezing Point: -36.7°C (-34°F) (Max) Melting Point: No Data Available Specific Gravity: 1.12 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) Viscosity: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: Aldehydes (Elevated temperatures)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: No product toxicology data available.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains ethylene glycol (EG). The toxicity of EG via inhalation or skin contact is expected to be slight at room temperature. The estimated oral lethal dose is about 100 cc (3.3 oz.) for an adult human. Ethylene glycol is oxidized to oxalic acid which results in the deposition of calcium oxalate crystals mainly in the brain and kidneys. Early signs and symptoms of EG poisoning may resemble those of alcohol intoxication. Later, the victim may experience nausea, vomiting, weakness, abdominal and muscle pain, difficulty in breathing and decreased urine output. When EG was heated above the boiling point of water, vapors formed which reportedly caused unconsciousness, increased lymphocyte count, and a rapid, jerky movement of the eyes in persons chronically exposed. When EG was administered orally to pregnant rats and mice, there was an increase in fetal deaths and birth defects. Some of these effects occurred at doses that had no toxic effects on the mothers. We are not aware of any reports that EG causes reproductive toxicity in human beings.

This product contains diethylene glycol (DEG). The estimated oral lethal dose is about 50 cc (1.6 oz) for an adult human. DEG has caused the following effects in laboratory animals: liver abnormalities, kidney damage and blood abnormalities. It has been suggested as a cause of the following effects in humans: liver abnormalities, kidney damage, lung damage and central nervous system damage.

2-Ethylhexanoic acid (2-EXA) caused an increase in liver size and enzyme levels when repeatedly administered to rats via the diet. When administered to pregnant rats by gavage or in drinking water, 2-EXA caused teratogenicity (birth defects) and delayed postnatal development of the pups. Additionally, 2-EXA impaired female fertility in rats. Birth defects were seen in the offspring of mice who were administered sodium 2-ethylhexanoate via intraperitoneal injection during pregnancy.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be

kept out of sewage and drainage systems and all bodies of water.

ENVIRONMENTAL FATE

This material is expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: Anti-freeze Preparations, Proprietary, NOT REGULATED AS A HAZARDOUS MATERIAL

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER THE IMDG CODE

ICAO/IATA Shipping Description: Anti-freeze Preparations, Proprietary, NOT REGULATED AS A DANGEROUS GOOD

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: YES

- 2. Delayed (Chronic) Health Effects: YES
- 3. Fire Hazard: NO
- 4. Sudden Release of Pressure Hazard: NO
- 5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1≓IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
•.	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Diethylene glycol	07
Ethylene Glycol	03, 05, 06, 07

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), PICCS (Philippines), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: KECI (Korea).

NEW JERSEY RTK CLASSIFICATION:

Refer to components listed in Section 2.

WHMIS CLASSIFICATION:

Class D, Division 1, Subdivision B: Toxic Material -Acute Lethality Class D, Division 2, Subdivision A: Very Toxic Material -Teratogenicity and Embryotoxicity Reproductive Toxicity Class D, Division 2, Subdivision B: Toxic Material -Chronic Toxic Effects

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 2 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 2* Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : ANTIFREEZE/COOLANT 3

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1,3,4,7,14,15,16

Revision Date: 08/10/2004

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TWA - Time Weighted Average	
PEL - Permissible Exposure Limit	
CAS - Chemical Abstract Service Number	
t IMO/IMDG - International Maritime Dangerous Goods Code	
MSDS - Material Safety Data Sheet	
NFPA - National Fire Protection Association (USA)	
NTP - National Toxicology Program (USA)	
OSHA - Occupational Safety and Health Administration	

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.



POWER SERVICE PRODUCTS, INC. MATERIAL SAFETY DATA SHEET



SECTION 1 - CHEMICAL COMPANY AND PRODUCT IDENTIFICATION

PRODUCT NAME: DIESEL FUEL SUPPLEMENT +CETANE BOOST

Unless otherwise noted, all sections of this MSDS apply to each of the following products and part numbers.

🔄 🚂 🛛 PART NUMBERS:

1:400 Treatment Ratio	1016-06, 1025-06, 1025-12, 1041-04, 1080-06, 11016-08, 11025-06, 11025-12, 11041-04, 11080-06
1:1,000 Treatment Ratio	1000, 1060-01
1:1,500 Treatment Ratio	1050-02, 1055-01, 1260-01

COMPANY IDENTIFICATION:

Power Service Products, Inc. P.O. Box 1089 Weatherford, TX 76086 Email: psp@powerservice.com Phone: 800/643-9089 or 817-599-9486 Fax: 817-599-4893

Emergency Phone Number: Within USA 1-800-424-9300. Outside USA 001-703-527-3887 (Call Collect).

111 SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Specific chemical information is being withheld as a Trade Secret. Specific chemical information will be made available to health professionals in accordance with 29 CFR 1910,1200.

INGREDIENTS

Petroleum Distillates Alkyl Nitrates Aromatic Hydrocarbons Glycol Ether

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SECTION 3 - HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

EYES: May cause eye irritation. Effects may include discomfort or pain and redness. SKIN: May be harmful if absorbed through the skin. May cause skin irritation. Prolonged or repeated skin contact may cause drying or defatting of the skin. Symptoms may include pain, itching, discoloration, swelling, and blistering.

INHALATION: Do not breathe vapors. Harmful or fatal if inhaled. Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. The vapor or fumes from this material may cause respiratory irritation and damage auditory system. Breathing this material at elevated concentrations causes central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors, or convulsions, loss of consciousness, coma or death. **INGESTION:** Do not take internally. May be harmful or fatal if swallowed. If swallowed, may be aspirated and cause lung damage. This material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death.

I TARGET ORGANS:

* Central nervous system, Auditory system, Blood, Eye, Heart, Kidney, Liver, Skin.

SECTION 4 - FIRST AID MEASURES

As a precaution, exposure to liquids, vapors, mists and fumes should be minimized.

EYE CONTACT:

Hold eyelids apart and flush eyes with large amounts of water for at least 15 minutes. Remove contact lenses, if present, after first 5 minutes of rinsing. If irritation persists, call a physician.

- SKIN CONTACT:

Wash contact area with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse. If irritation persists, call a physician.

INHALATION:

If overcome by vapors, move the exposed person to fresh air. If breathing is labored, administer oxygen. If breathing has stopped, apply artificial respiration. Seek medical attention if breathing difficulties continue.

INGESTION: 77

If swallowed, do NOT induce vomiting. If vomiting occurs, have person lean forward. Keep at rest. Give the person a glass of water or milk to drink and get immediate medical attention. Never give anything by mouth to an unconscious person.

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SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

FLAMMABLE PROPERTIES:

FLASH POINT:

Treatment Ratio	Part Numbers:	Flash Point:	
1:400 Treatment Ratio	1016-06, 1025-06, 1025-12, 1041-04, 1080-06, 11016-06, 11025-06, 11025- 12, 11041-04, 11080-06	105°F (40.6°C)	
1:1,000 Treatment Ratio	1000, 1060-01	130°F (54.4°C)	
1:1,500 Treatment Ratio	1050-02, 1055-01, 1260-01	142°F (61.1°C)	

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FLAMMABLE LIMITS: lower: Not Determined upper: Not Determined

AUTOIGNITION TEMPERATURE: Not Determined

EXTINGUISHING MEDIA:

Use water fog, foam dry chemical or carbon dioxide (CO2) to extinguish flames.

FIRE FIGHTING:

FIRE FIGHTING INSTRUCTIONS: Use standard protective equipment including selfcontained breathing apparatus (SCBA).

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors are heavier than air and may travel along the ground to a distant ignition source and flash back. See Section 10 for Stability and Reactivity.

NOTE: EMPTY CONTAINERS CONTAIN COMBUSTIBLE VAPORS. DO NOT USE CUTTING TORCH EQUIPMENT OR ANY OTHER FLAME OR OTHER SOURCES OF IGNITION ON ANY EMPTY CONTAINER.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PROTECTIVE MEASURES:

Avoid contact with spilled material. Eliminate all sources of ignition in the vicinity of the spill or released vapor. See Section 3 for Hazards Identification. See Section 4 for First Aid Measures. See Section 5 for Fire Fighting Information. See Section 8 for Personal Protective Equipment.

SPILL MANAGEMENT:

Eliminate potential sources of ignition. Stop leak if it can be done without risk. Dike and contain spill. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. A vapor suppressing foam may be used to reduce vapors. Local, state and federal laws and/or regulations may apply to releases and disposal of this material, as well as those materials and items employed in the clean-up releases. The user/responder will need to determine which

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local, state and federal laws and/or regulations are applicable. The National Response Center can be reached at 1-800-424-8802.

SECTION 7 - HANDLING AND STORAGE

HANDLING: Avoid contact with eyes and skin. Use with adequate ventilation. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Keep away from ignition sources such as heat, sparks and open flame. No smoking.

STORING: DO NOT USE OR STORE near heat, sparks or open flames. USE AND STORE ONLY IN A WELL VENTILATED AREA, Keep container closed when not in use.

STORAGE TEMPERATURE:

Treatment Ratio	Part Numbers:	<u>Storage</u> Temperature:
1:400 Treatment Ratio	1016-06, 1025-06, 1025-12, 1041-04, 1080-06, 11016-06, 11025-06, 11025- 12, 11041-04, 11080-06	-20°F to 104°F (-28.8°C to 40°C)
1:1,000 Treatment Ratio	1000, 1060-01	0°F to 104°F (-17.8°C to 40°C)
1:1,500 Treatment Ratio	1050-02, 1055-01, 1260-01	10°F to 104°F (-12.2°C to 40°C)

¹ NOTE: CONTAINERS ARE STRICTLY SINGLE TRIP CONTAINERS. THEY ARE NOT TO BE USED FOR ANY REASON AFTER BEING EMPTIED. EMPTY CONTAINERS CONTAIN COMBUSTIBLE VAPORS. DO NOT USE CUTTING TORCH EQUIPMENT OR ANY OTHER FLAME OR OTHER SOURCES OF IGNITION ON ANY EMPTY CONTAINER.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE GUIDELINES:

		OSHA	ACGIH		NIOSH			
	CAS#	PEL	TLV	STEL	REL	STEL	IDLH	Note
vinyl acetate	108-05-4	not est,	10 ppm	15 ppm	not est.	4 ppm	not est.	n/a
ethylbanzene	100-41-4	100 ppm	100 ppm	125 ppm	100 ppm	125 ppm	800 ppm	n/a
naphthalene	91-20-3	10 ppm	10 ppm	15 ppm	10 ppm	15 ppm	250 ppm	n/a
xylene	1330-20-7	100 ppm	100 ppm	150 ppm	100 ppm	150 ppm	900 ppm	n/a

ENGINEERING CONTROLS: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Local exhaust ventilation is recommended to control exposure.

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PERSONAL PROTECTIVE EQUIPMENT (PPE):

Eyes and Face: Eye protection such as safety glasses or chemical goggles is recommended if contact is likely.

Skin: If prolonged or repeated skin contact is likely, chemical/oil resistant clothing and gloves are recommended. Wear additional protective clothing as appropriate. Respiratory: Wear a NIOSH/MSHA approved respirator as necessary.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Practice good housekeeping.

NOTE: These precautions are for room temperature handling. If used at elevated temperatures or aerosol/spray application added precautions may be necessary.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

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	1:400 Treatment Ratio	1:1,000 Treatment Ratio	1:1,500 Treatment Ratio
PHYSICAL FORM	Liquid	Liquid	Liquid
COLOR	Brown	Brown	Brown
ODOR	Aromatic Solvent	Aromatic Solvent	Aromatic Solvent
POUR POINT	-35°F (-37,2°C)	-20 (-28.9°C)	-10 (-23,3°C)
BOILING POINT	300°F (148.9°C)	300°F (148.9°C)	300°F (148.9°C)
VAPOR PRESSURE (psi)	0.2 - 0.95	0.2 - 0.95	0.2 - 0.95
VAPOR DENSITY (AIR = 1)	>5.0	>5.0	>5.0
рН	7 - 8 (slightly basic)	7-8 (slightly basic)	7 - 8 (slightly basic)
PERCENT, VOLATILE BY VOLUME (%)	>44%	>33%	>25%

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY;

Stable under normal conditions.

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CONDITIONS TO AVOID:

Open flames and high energy ignition sources. Elevated temperatures.

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MATERIALS TO AVOID:

May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, alkalis etc.

HAZARDOUS DECOMPOSITION:

Carbon oxides.

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HAZARDOUS POLYMERIZATION:

Hazardous polymerization will not occur.

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k **IMMEDIATE HEALTH EFFECTS:**

ACUTE TOXICITY - CALCULATED

LD50 > 2000 mg/kg Oral LD50 > 2000 mg/kg Dermal LC50 > 5mg/L Inhalation

This product contains the following chemicals classified as carcinogens as indicated:

Vinyl acetate	IARC
Ethylbenzene	IARC
Napthalene	IARC, NTP

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY:

This material is expected to be toxic to aquatic organisms.

SECTION'13 - DISPOSAL CONSIDERATIONS

RCRA Hazard Class (40CFR 261):

This product, if discarded, may become a hazardous waste under CERCLA. Use the following information:

Proper Shipping Name: RQ Waste Flammable Liquid, N.O.S., (Petroleum Hydrocarbons) Class: 3 I.D. Number: UN 1993

Packing Group: III RCRA WASTE Number: D001

State or local laws may impose additional regulatory requirements regarding disposal.

EMPTY CONTAINER WARNING: Empty containers may contain residue and can be dangerous. See Section 5 for Fire and Explosion Hazard Data.

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SECTION 14 - TRANSPORTATION INFORMATION

The following part numbers are Consumer Commodities and are not regulated by DOT:

1:400 Treatment Ratio	1016-06, 1025-06, 1025-12, 1041-04, 1080-06, 11016-06, 11025-06, 11025-12, 11041-04,
	11080-06
1:1,500 Treatment Ratio	1050-02, 1055-01

The following part numbers are regulated by DOT:

1:1,000 Treatment Ratio	1000, 1060-01
1:1,500 Treatment Ratio	1260-01

PROPER SHIPPING NAME: Combustible Liquid, N.O.S., (Petroleum Hydrocarbons) HAZARD CLASS: Combustible Liquid I.D. NUMBER: NA1993 PACKING GROUP: III PLACARØING: Combustible Liquid

SECTION 15 - REGULATORY INFORMATION

§14(a) Consumer Product Safety Act General Certificate of Conformity

Power Service Products, Inc. certifies that its products meet the statutory and regulatory requirements of the US Consumer Products Safety Act, the Federal Hazardous Substances Act, and the Poison Prevention Packaging Act of 1970, as applicable. The Power Service products are manufactured in the United States in Weatherford, Texas, unless otherwise indicated on the product label. The product manufacture date is stamped on the product container. This Certification is based upon a reasonable testing program conducted by Power Service Products, Inc. which includes a quality control program incorporating confirmation of compliance by packaging and closure manufacturers. Third-party testing is not required to certify compliance. Further details may be obtained by contacting the Power Service Products, Inc. Compliance Coordinator at 1-800-643-9089.

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200

TSCA STATUS: 4

All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

* EPA SARA TITLE III CHEMICAL LISTINGS: Section 302 Extremely Hazardous Substances: None

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670 FT

Sections 311/ 312 Hazard Class:

Acute Health Effects: Yes Sudden Release of Pressure Hazard: No Chronic Health Effects: Yes Reactivity Hazard: No Fire Hazard: Yes

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION) RATING: HEALTH: 2 FIRE: 2 REACTIVITY: 0

Section \$13:

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This product contains the following chemicals that are subject to the reporting requirements of EPCRA Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR Part 372).

Treatment Ratio	CAS Number	Chemical Name	<u>Max %</u>	
1:400 Treatment Ratio	100-41-4	ethylbenzene	8.6	
	1330-20-7	xylene, mixed isomers	4.4	
1:1,000 Treatment Ratio	108-05-4	vinyl acetate	0.2	
	100-41-4	ethylbenzene	3.1	
	1330-20-7	xylene, mixed isomers	1.9	
······································	91-20-3	naphthalene	0.6	
1:1,500 Treatment Ratio	108-05-4	vinyl acetate	0.3	
	100-41-4	ethylbenzene	4.6	
	1330-20-7	xylene, mixed isomers	2.8	
	91-20-3	naphthalene	0.9	

The following components of this material are found on these state regulatory lists.

Vinyl acetate: NDEP HAP, NJ RTK, MN Hazardous substance

Ethylbenzene: NDEP HAP, California Prop. 65, MA RTK, NJ RTK, PA RTK, RI RTK, MN Hazardous substance

Xylene: NDEP HAP, MA RTK, NJ RTK, PA RTK, MN Hazardous substance

Napthalene: California Prop. 65, MA RTK, NJ RTK, PA RTK, MN Hazardous substance

The following chemicals are known to the state of California to cause cancer: Ethylbenzene, Napthalene

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SECTION 16 – OTHER INFORMATION

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The information contained herein is offered in good faith and is believed to be accurate based on the data available to us as of the date of MSDS preparation. The information in this document applies to this specific product as supplied. It may not be appropriate for this product if the product is used in combination with other materials. The information in this document is not intended to constitute product performance information. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product. No statement shall be construed as an endorsement of any product or process. The recommended industrial hygiene and safe handling procedures are believed to be valid in the context of the intended use as described in product labeling. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. You are urged to obtain material safety data sheets for all products you buy, process, use or distribute, and are encouraged to advise those who may come in contact with such products of the information contained therein. Regulatory reguirements are subject to change and may differ between locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. No warranty or guarantee is expressed or implied with respect to this product, the accuracy and sufficiency of the data or recommendations herein, or the results to be obtained from the use of this product. IN NO EVENT SHALL POWER SERVICE PRODUCTS, INC. BE LIABLE FOR ANY LOSS, CLAIM, DAMAGE OR LIABILITY OF ANY KIND, WHICH MAY ARISE FROM OR IN CONNECTION WITH THE INFORMATION CONTAINED IN THIS DOCUMENT OR FROM THE USE, HANDLING OR STORAGE OF THE PRODUCT BY THE BUYER/USER, WHETHER DIRECT, INDIRECT, OR CONSEQUENTIAL, OR FOR ANY CLAIM BY ANY THIRD PARTY, BEYOND THE PURCHASE PRICE OR REPLACEMENT OF THE PRODUCT IN CONNECTION WITH WHICH SUCH LOSS, CLAIM, DAMAGE OR LIABILITY AROSE.

THE FOREGOING LIMITATIONS APPLY REGARDLESS OF THE CAUSES OR CIRCUMSTANCES GIVING RISE TO SUCH LOSS, CLAIM, DAMAGE OR LIABILITY, EVEN IF SUCH LOSS, CLAIM, DAMAGE, OR LIABILITY IS BASED ON NEGLIGENCE OR OTHER TORTS OR BREACH OF CONTRACT.

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POWER SERVICE PRODUCTS, INC. MATERIAL SAFETY DATA SHEET



SECTION 1 - CHEMICAL COMPANY AND PRODUCT IDENTIFICATION

PRODUCT NAME: DIESEL KLEEN +CETANE BOOST

Unless otherwise noted, all sections of this MSDS apply to each of the following products and part numbers.

PART NUMBERS:

1:400 Treatment Ratio	3016-06, 3016-09, 3025-12, 3041-04, 3080-06, 13016-06, 13016-09, 13025-12, 13041-04, 13080-06
1:1,000 Treatment Ratio	3128-04
1:1,500 Treatment Ratio	3880-06, 3850-02, 3855-01, 3860-01, 3800

COMPANY IDENTIFICATION:

Power Service Products, Inc. P.O. Box 1089 Weatherford, TX 76086 Email: psp@powerservice.com Phone: 800/643-9089 or 817-599-9486 Fax: 817-599-4893

Emergency Phone Number: Within USA 1-800-424-9300. Outside USA 001-703-527-3887 (Call Collect).

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Specific chemical information is being withheld as a Trade Secret. Specific chemical information will be made available to health professionals in accordance with 29 CFR 1910.1200.

INGREDIENTS

Petroleum Distillates Aromatic Hydrocarbons

SECTION 3 - HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

EYES: May cause eye irritation. Effects may include discomfort or pain and redness.

INHALATION: Do not breathe vapors. Harmful or fatal if inhaled. Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. The vapor or fumes from this material may cause respiratory irritation and damage auditory system. Breathing this material at elevated concentrations causes central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors, or convulsions, loss of consciousness, coma or death.

INGESTION: Do not take internally. Harmful or fatal if swallowed. If swallowed, may be aspirated and cause lung damage. This material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death.

SKIN:	
1:400 Treatment Ratio	May be harmful if absorbed through the skin. May cause skin irritation. Prolonged or repeated skin contact may cause drying or defatting of
1:1000 Treatment Ratio	the skin. Symptoms may include pain, itching, discoloration, swelling, and blistering.
1:1500 Treatment Ratio	Harmful if absorbed through the skin. May cause skin irritation. Prolonged or repeated skin contact may cause drying or defatting of the skin. Symptoms may include pain, itching, discoloration, swelling, and blistering.

TARGET ORGANS:

Central nervous system, cardiovascular system, kidneys, liver, blood, skin, eyes, lungs.

SECTION 4 - FIRST AID MEASURES

As a precaution, exposure to liquids, vapors, mists and fumes should be minimized.

EYE CONTACT:

Hold eyelids apart and flush eyes with large amounts of water for at least 15 minutes. Remove contact lenses, if present, after first 5 minutes of rinsing. If irritation persists, call a physician.

SKIN CONTACT:

Wash contact area with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse. If irritation persists, call a physician.

INHALATION:

If overcome by vapors, move the exposed person to fresh air. If breathing is labored, administer oxygen. If breathing has stopped, apply artificial respiration. Seek medical attention if breathing difficulties continue.

INGESTION:

If swallowed, do NOT induce vomiting. If vomiting occurs, have person lean forward. Keep at rest. Give the person a glass of water or milk to drink and get immediate medical attention. Never give anything by mouth to an unconscious person.

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

FLAMMABLE PROPERTIES:

FLASH POINT:

Treatment Ratio	Part Numbers:	Flash Point:
1:400 Treatment Ratio	3016-06, 3016-09, 3025-12, 3041-04, 3080-06, 13016-06, 13016-09, 13025- 12, 13041-04, 13080-06	105°F (41°C)
1:1,000 Treatment Ratio	3128-04	111°F (44°C)
1:1,500 Treatment Ratio	3880-06, 3850-02, 3855-01, 3860-01, 3800	142°F (61°C)

FLAMMABLE LIMITS: lower: Not Determined upper: Not Determined

AUTOIGNITION TEMPERATURE: Not Determined

EXTINGUISHING MEDIA:

Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

FIRE FIGHTING:

FIRE FIGHTING INSTRUCTIONS: Use standard protective equipment including selfcontained breathing apparatus (SCBA).

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors are heavier than air and may travel along the ground to a distant ignition source and flash back. See Section 10 for Stability and Reactivity.

NOTE: EMPTY CONTAINERS CONTAIN COMBUSTIBLE VAPORS THAT CAN CAUSE FLASH FIRES OR EXPLOSIONS. CONTAINERS ARE SINGLE-TRIP CONTAINERS AND SHOULD NOT BE USED FOR ANY REASON AFTER BEING EMPTIED. DO NOT USE CUTTING TORCH EQUIPMENT OR ANY OTHER FLAME OR OTHER SOURCES OF IGNITION ON ANY EMPTY CONTAINER.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PROTECTIVE MEASURES:

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas. Eliminate all sources of ignition in the vicinity of the spill or released vapor. See Section 3 for Hazards Identification. See Section 4 for First Aid Measures. See Section 5 for Fire Fighting Information. See Section 8 for Personal Protective Equipment.

SPILL MANAGEMENT:

Eliminate potential sources of ignition. Stop leak if it can be done without risk. Dike and contain spill. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. A vapor suppressing foam may be used to reduce vapors. Local, state and federal laws and/or regulations may apply to releases and disposal of this material, as well as those materials and items employed in the clean-up releases. The user/responder will need to determine which local, state and federal laws and/or regulations are applicable. The National Response Center can be reached at 1-800-424-8802.

SECTION 7 - HANDLING AND STORAGE

HANDLING: Avoid contact with eyes and skin. Use only with adequate ventilation. Use proper bonding and/or grounding procedures. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Keep away from ignition sources such as heat, sparks, and flames. No smoking.

STORING: DO NOT USE OR STORE near heat, sparks, or flame. USE AND STORE ONLY IN A WELL-VENTILATED AREA. Handle containers with care. Keep container closed when not in use.

STORAGE TEMPERATURE:

Treatment Ratio	Part Numbers:	Storage Temperature:
1:400 Treatment Ratio	3016-06, 3016-09, 3025-12, 3041-04, 3080-06, 13016-06, 13016-09, 13025-12, 13041-04, 13080-06	0°F - 104°F (-18°C - 40°C)
1:1,000 Treatment Ratio	3128-04	0°F - 104°F (-18°C - 40°C)
1:1,500 Treatment Ratio	3880-06, 3850-02, 3855-01, 3860-01, 3800	0°F - 104°F (-18°C - 40°C)

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN COMBUSTIBLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE GUIDELINES:

		OSHA	AC	GIH		NIOSH		
	CAS #	PEL	TLV	STEL	REL	STEL	IDLH	Note
Ethylbenzene	100-41-4	100 ppm	100 ppm	125 ppm	100 ppm	125 ppm	800 ppm	n/a
Naphthalene	91-20-3	10 ppm	10 ppm	15 ppm	10 ppm	15 ppm	250 ppm	skin
Xylene	1330-20-7	100 ppm	100 ppm	150 ppm	100 ppm	150 ppm	900 ppm	n/a
Petroleum Distillates	n/a	500 ppm	not est.	not est.	86 ppm	444 ppm	1100 ppm	n/a
Cumene	98-82-8	50 ppm	50 ppm	not est.	50 ppm	not est.	900 ppm	skin

ENGINEERING CONTROLS: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Local exhaust ventilation is recommended to control exposure.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Eyes and Face: Eye protection such as safety glasses or chemical goggles is recommended if contact is likely.

Skin: Chemical/oil resistant clothing and gloves are recommended. Wear additional protective clothing as appropriate.

Respiratory: Wear a NIOSH/MSHA approved respirator as necessary.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Practice good housekeeping.

NOTE: These precautions are for room temperature handling.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

	1:400 Treatment Ratio 1:1,000 Treatment Ratio 1:1,500 Treatm		1:1,500 Treatment Ratio	
PHYSICAL FORM	Liquid	Liquid	Liquid	
COLOR	Straw	Brown	Brown	
ODOR	Aromatic Solvent	Aromatic Solvent	Aromatic Solvent	
POUR POINT	-75°F (-59°C)	-75°F (-59°C)	-75°F (-59°C)	
BOILING POINT	300°F (149°C)	300°F (149°C)	300°F (149°C)	
VAPOR PRESSURE (psi)	0.2 - 0.95	0.2 - 0.95	0.2 - 0.95	
VAPOR DENSITY (AIR = 1)	>5.0	>5.0	>5.0	
рН	7 – 8 (slightly basic)	7 – 8 (slightly basic)	7 – 8 (slightly basic)	

SPECIFIC GRAVITY (at 60°F)	0.92	0.91	0.93

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY:

This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

CONDITIONS TO AVOID:

Flames, high energy ignition sources, and elevated temperatures.

MATERIALS TO AVOID:

May react with strong oxidizing agents, such as; chlorates, nitrates, peroxides, etc.; alkalis; lead and lead alloys; reducing agents; brass; copper; oxygen.

HAZARDOUS DECOMPOSITION:

Carbon oxides, products of incomplete combustion and nitrogen oxide.

HAZARDOUS POLYMERIZATION:

Hazardous polymerization will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS:

This product contains the following chemicals classified as carcinogens as indicated:

Chemical	Listed By
Ethylbenzene	IARC
Naphthalene	IARC, NTP
Cumene	IARC

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY:

This material is expected to be toxic to aquatic organisms.

SECTION 13 - DISPOSAL CONSIDERATIONS

RCRA Information: Disposal of unused product may be subject to RCRA hazardous waste regulations (40 CFR Part 261). Disposal of the used product may also be regulated as hazardous waste due to resulting mixture characteristics, mixture components or product use. Such changes to the product may result in different and/or additional hazardous waste codes. Potential RCRA waste code based on the product as shipped: D001 IGNITABILITY. State or local laws may impose additional regulatory requirements regarding disposal. *Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.*

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN COMBUSTIBLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA.

SECTION 14 - TRANSPORTATION INFORMATION

The following part numbers are not regulated by DOT:

1:400 Treatment Ratio	3016-06, 3016-09, 3025-12, 3041-04, 3080-06, 13016-06, 13016-09, 13025-12, 13041-04, 13080-06
1:1,000 Treatment Ratio	3128-04
1:1,500 Treatment Ratio	3880-06, 3850-01, 3855-01

The following part numbers are regulated by DOT:

1:1,500 Treatment Ratio 3860-01

PROPER SHIPPING NAME: Combustible Liquid, N.O.S., (Petroleum Distillates), Marine Pollutant (2-Ethylhexyl Nitrate) HAZARD CLASS: Combustible Liquid I.D. NUMBER: NA 1993 PACKING GROUP: III PLACARDING: Combustible Liquid MARINE POLLUTANT: Yes

1:1,500 Treatment Ratio 3800

PROPER SHIPPING NAME: Combustible Liquid, N.O.S., (Petroleum Distillates) RQ (Naphthalene, Xylene), Marine Pollutant (2-Ethylhexyl Nitrate)
HAZARD CLASS: Combustible Liquid
I.D. NUMBER: NA 1993
PACKING GROUP: III
PLACARDING: Combustible Liquid
PRODUCT RQ: 100 lbs. (45.45 kg) – Xylene, Naphthalene
MARINE POLLUTANT: Yes

SECTION 15 - REGULATORY INFORMATION

§14(a) Consumer Product Safety Act General Certificate of Conformity

Power Service Products, Inc. certifies that this product meets the statutory and regulatory requirements of the US Consumer Products Safety Act, the Federal Hazardous Substances Act, and the Poison Prevention Packaging Act of 1970, as applicable. The Power Service products are manufactured in the United States in Weatherford, Texas, unless otherwise indicated on the product label. The product manufacture date is stamped on the product container. This Certification is based upon a reasonable testing program conducted by Power Service Products, Inc. which includes a quality control program incorporating, as necessary, confirmation of compliance by component suppliers. Third-party testing is not required to certify compliance. Further details may be obtained by contacting the Power Service Products, Inc. Compliance Coordinator at 1-800-643-9089.

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200

TSCA STATUS:

All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

EPA SARA TITLE III CHEMICAL LISTINGS:

Section 302 Extremely Hazardous Substances: None

Sections 311/ 312 Hazard Class:

Acute Health Effects: Yes Sudden Release of Pressure Hazard: No Chronic Health Effects: Yes Reactivity Hazard: No Fire Hazard: Yes

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION) RATING:

HEALTH: 2 FIRE: 2 REACTIVITY: 0

Section 313:

Specific chemical information is being withheld as a Trade Secret. The following chemicals subject to the reporting requirements of EPCRA Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR Part 372) may be present in this product at a concentration that does not exceed the specified upper weight percentage.

Treatment Ratio CAS Number		Chemical Name	Max %
1:400 Treatment Ratio	100-41-4	Ethylbenzene	22.5
	1330-20-7	Xylene, Mixed Isomers	8.0

	91-20-3	Naphthalene	4.0
	98-82-8	Cumene	4.0
1:1,000 Treatment Ratio	100-41-4	Ethylbenzene	11.5
	1330-20-7	Xylene, Mixed Isomers	4.5
	91-20-3	Naphthalene	2.5
	98-82-8	Cumene	2.0
1:1,500 Treatment Ratio	100-41-4	Ethylbenzene	4.5
	91-20-3	Naphthalene	1.5
	1330-20-7	Xylene, Mixed Isomers	2.0

The following components of this material are found on these state regulatory lists.

Ethylbenzene: California Prop. 65, MA RTK, NJ RTK, PA RTK, RI RTK, NDEP HAP, MN Hazardous Substance, CA RTK

Xylene: MA RTK, NJ RTK, PA RTK, RI RTK, NDEP HAP, MN Hazardous Substance, CA RTK

Naphthalene: California Prop. 65, MA RTK, NJ RTK, PA RTK, RI RTK, NDEP HAP, MN Hazardous Substance, CA RTK

Cumene: California Prop. 65, MA RTK, NJ RTK, PA RTK, RI RTK, NDEP HAP, MN Hazardous Substance, CA RTK

This product contains a chemical known to the state of California to cause cancer and/or birth defects or other reproductive harm.

SECTION 16 – OTHER INFORMATION

The information contained herein is offered in good faith and is believed to be accurate based on the data available to us as of the date of MSDS preparation. The information in this document applies to this specific product as supplied. It may not be appropriate for this product if the product is used in combination with other materials. The information in this document is not intended to constitute product performance information. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product. No statement shall be construed as an endorsement of any product or process. The recommended industrial hygiene and safe handling procedures are believed to be valid in the context of the intended use as described in product labeling. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. You are urged to obtain material safety data sheets for all products you buy, process, use or distribute, and are encouraged to advise those who may come in contact with such products of the information contained therein. Regulatory requirements are subject to change and may differ between locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. No warranty or guarantee is expressed or implied with respect to this product, the accuracy and sufficiency of the data or recommendations herein, or the results to be obtained from the use of this product. IN NO EVENT SHALL POWER SERVICE PRODUCTS, INC. BE LIABLE FOR ANY LOSS, CLAIM,

Revised: November 1, 2011 Supersedes: September 23, 2010 POWER SERVICE DIESEL KLEEN +CETANE BOOST DAMAGE OR LIABILITY OF ANY KIND, WHICH MAY ARISE FROM OR IN CONNECTION WITH THE INFORMATION CONTAINED IN THIS DOCUMENT OR FROM THE USE, HANDLING OR STORAGE OF THE PRODUCT BY THE BUYER/USER, WHETHER DIRECT, INDIRECT, OR CONSEQUENTIAL, OR FOR ANY CLAIM BY ANY THIRD PARTY, BEYOND THE PURCHASE PRICE OR REPLACEMENT OF THE PRODUCT IN CONNECTION WITH WHICH SUCH LOSS, CLAIM, DAMAGE OR LIABILITY AROSE.

THE FOREGOING LIMITATIONS APPLY REGARDLESS OF THE CAUSES OR CIRCUMSTANCES GIVING RISE TO SUCH LOSS, CLAIM, DAMAGE OR LIABILITY, EVEN IF SUCH LOSS, CLAIM, DAMAGE, OR LIABILITY IS BASED ON NEGLIGENCE OR OTHER TORTS OR BREACH OF CONTRACT.

**** MATERIAL SAFETY DATA SHEET ****

15101 Diesel Power Air Brake Antifreeze

SEC	1	_	PRODUCT AND MANUFACTURER INFO	SEC	9 -	- 1	PHYS, CHEM PROPERTIES
SEC	2	-	COMPOSITION INFORMATION	SEC	10	-	STABILITY, REACTIVITY
SEC	3	-	HAZARDS IDENTIFICATION	SEC	11	-	TOXICOLOGY INFORMATION
SEC	4	-	FIRST AID MEASURES	SEC	12	-	ECOLOGICAL INFORMATION
SEC	5	-	FIRE FIGHTING MEASURES	SEC	13	-	DISPOSAL CONSIDERATIONS
SEC	6	-	ACCIDENTAL RELEASE MEASURES	SEC	14	-	TRANSPORT INFORMATION
SEC	7	-	HANDLING AND STORAGE	SEC	15	-	REGULATORY INFORMATION
SEC	8	-	EXPOSURE, PERS. PROTECTION	SEC	16	-	ADDITIONAL INFORMATION

**** SECTION 1 - CHEMICAL PRODUCT AND MANUFACTURER IDENTIFICATION ****

Product Name: 15101 Diesel Power Air Brake Antifreeze

Part Number:

15101

Product CAS: (None)

Product Code: 15101

Synonyms: 15101 Diesel Power Air Brake Antifreeze

MANUFACTURER IDENTIFICATION

Name:Gold Eagle CompanyAddress:4400 S. Kildare Blvd.City:ChicagoState:ILZip:60632-4372

For information call: 773-376-4400

Emergency Number: N/A

Emergency Agency: INFOTRAC

Agency Number: 1-800-535-5053

MSDS Effective Date: 4/16/2007

MSDS Supersedes Date: 3/1/2013

Miscellaneous: Product CAS: Mixture

Brief Description: Gas line dryer and antifreeze for automobiles.

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Chemical Name Methanol Proprietary Additive	CAS 67-56-1 (none)	MIN 99 1	MAX 99 1
Miscellaneous: CHEMICAL NAME Methanol	LIMIT VALUES PEL 200 ppm PEL 260 mg/m3		
Proprietary Additive (CAS#:Mixture)	N/A		

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**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW:

NFPA: Health: 1 Fire: 3 Reactivity: 0 Specific Hazard: None

HMIS: Health: 1 Flammability: 3 Reactivity: 0 PPE: B

Miscellaneous:

This product does not contain any components above de minimus concentrations that are considered carcinogenic by OSHA, IARC or NTP.

POTENTIAL HEALTH EFFECTS Target Organs/Primary Route(s) of Entry:

Eye:

Mild irritant.

Skin:

Prolonged or repeated skin contact may cause dermatitis, scaling and possible systemic effects.

Ingestion:

POISON-Oral human lowest lethal dose = 6.4 g/kg

Inhalation:

Poisonous, narcotic chemical affecting central nervous system resulting in: dizziness, nausea, visual impairment, narcosis and muscular impairment.

Miscellaneous:

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**** SECTION 4 - FIRST AID MEASURES ****

Eye:

If the product contacts the eyes, immediately wash the eyes with large quantities of room temperature water for at least 15 minutes, occasionally lifting the lower and upper lids. Get medical attention immediately. A follow up visit to an ophthalmologist should be made. Contact lenses should not be worn when working with this chemical.

Skin:

If the product contacts the skin, promptly wash the contaminated skin with soap and water for at least 15 minutes. If this product penetrates the clothing, promptly remove the clothing and wash the skin with soap and water. Systemic effects may be delayed 18 to 72 hours, therefore keep individual under observation.

Ingestion:

If this product is ingested and the person is conscious, induce vomiting, then give 2 teaspoons of baking soda in a glass of water. DO NOT INDUCE AN UNCONSCIOUS PERSON TO VOMIT. Get medical attention immediately.

Inhalation:

Move the exposed person to fresh air at once and call emergency medical care. If breathing has stopped, give artificial respiration. If breathing is difficult, give humidified oxygen.

Notes to Physician: No data available.

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**** SECTION 5 - FIRE FIGHTING MEASURES ****

Flash Point: 52 F. (11 C.) TOC

AutoIgnition Temperature: N/A

Flammable Limits

Lower Limit: Explosive Limit (LEL): 6.0

Upper Limit: Explosive Limit (UEL): 36.5

Extinguishing Media:

Use halon replacement or carbon dioxide extinguishers or alcohol foam for small fires. Water spray or fog can cool fire but may not be effective in extinguishing fire. Large fires should be extinguished with alcohol foam. Use water spray to cool containers exposed to fire. Containers may explode in heat or fire.

Unusual Fire and Explosion Hazards:

Dangerous fire and explosion hazard when exposed to heat or flame. Methanol is extremely flammable and forms explosive mixtures with air. Methanol vapors may travel considerable distance to a source of ignition and flash back.

Special Fire Fighting Procedures:

Wear NIOSH approved SCBA respirator in the positive pressure mode and chemical protective clothing.

General Information:

Flammable Limits: 6.0 to 36.5

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**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

Small Spill: Remove sources of heat or ignition, provide adequate ventilation, contain leak using absorbent, inert, non-combustible material.

Large Spill: Contain spill, transfer to secure containers. In the event of an uncontrolled material release, the user should determine if release is reportable under applicable laws and regulations.

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**** SECTION 7 - HANDLING AND STORAGE ****

Handling: See other sections of MSDS.

Storage: See other sections of MSDS.

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**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

GENERAL HYGIENE CONSIDERATIONS:

Use normal hygiene practices.

OTHER PRECAUTIONS:

Methanol waste and material contaminated with methanol would be regulated as a hazardous waste material under the hazardous waste number U154.

ENGINEERING CONTROLS:

Local Exhaust: Provide local ventilation to maintain exposure levels below recommended exposure limits.

Mechanical (General): In confined spaces, mechanical ventilation may be required.

Special Ventilation: N/A

Other Ventilation: N/A

PERSONAL PROTECTIVE EQUIPMENT

Eyes/face: Use splash proof chemical, safety goggles or appropriate full-face respirator. Contact lenses should not be worn when working with this chemical.

Skin:

Use natural rubber or neoprene gloves as required.

Respirators:

Do not use air purifying respirator. Use NIOSH approved respirator approved supplied or self contained respirator. Respirators must be selected based on the airborne levels found in the workplace and must not exceed the working limits of the respirator.

Other Protective Clothing/Equipment:

If there is a possibility of exposure of an individual's body to methanol, wear body covering work clothes to avoid prolonged or repeated exposure.

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**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Appearance/Odor: Yellow liquid, solvent odor

pH: N/A

Vapor Pressure: (MM HG): 97.0

Vapor Density(Air=1): 1.1

Evaporation Rate: N/A

Viscosity: N/A

Boiling Point: 148 F. (65 C.) N/A

Freezing/Melting Point: N/A

Decomposition Temperature: N/A

Solubility in Water: Soluble

Specific Gravity: 0.795

Molecular Formula: N/A

Molecular Weight: N/A

VOC Coating (minus water): 0 Lbs/Gallon

Coating Density : 0 Lbs/Gallon

Solvent Density: 0 Lbs/Gallon

Percent Solvent (volume): 0

Percent Solids (volume): 0

Percent Water (volume): 0

Percent Volatile by Weight: 0

Miscellaneous: % Volatile/Volume: 100.0

Specific Gravity (H2O = 1): N/A

Percent Solvent (Volume): N/A

Percent Solids (Volume): N/A

Percent Water (Volume): N/A

Product is flammable, keep away from sources of ignition, combustibles, oxidizing material and acid. Store in an area equipped with automatic sprinklers or fire extinguishing system. Empty containers contain product residues, assume empty container to have the same hazards as full containers.

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**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability: Stable: Yes

Conditions to Avoid:

Store in a well ventilated place away from sources of ignition, combustibles, oxidizing materials and acid.

Incompatibilities with Other Materials:

Strong oxidizing agents, aluminum, zinc, or metals that displace hydrogen, rubber and rubber based coatings, chromic anhydride, lead perchlorate and perchloric acids.

Hazardous Decomposition Products: Excessive heating and/or incomplete combustion will produce carbon monoxide.

Hazardous Polymerization: Hazardous Polymerization May Occur: No

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**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

No data available.

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**** SECTION 12 - ECOLOGICAL INFORMATION ****

No data available.

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**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of product in accordance with local, state, and federal regulations. Before attempting clean up, refer to other sections of MSDS for hazard warning information.

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**** SECTION 14 - TRANSPORT INFORMATION ****

Transportation Information: Shipping Information (CFR 49 and IMDG):

Proper Shipping Name: Gasoline Additive, N.O.I. DOT Hazard Class: Consumer commodity, ORM-D DOT UN Number: None required. IMDG Shipping Name: Dangerous Goods in Limited Quantities of Class 3.2 (Methanol), PGII

Label Information: No data available.

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**** SECTION 15 - REGULATORY INFORMATION ****

SARA Title III:

Section 302: None Section 304: None Section 311: Hazard categories-Fire Hazard-Yes; Acute=Yes and Chronic=Yes Section 313: Methanol, CAS# 67-56-1, 99.0%

CERCLA:

Section 311(b)(4): Requires discharges of crude oil and petroleum products in any kind or form to waters must immediately be reported to the National Response Center at (800) 424-8802.

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**** SECTION 16 - ADDITIONAL INFORMATION ****

Disclaimer: Information presented herein is believed to be factual, as it has been derived from the works and opinions of persons believed to be qualified experts. However, nothing contained in this information is to be taken as warranty or

representation for which the Gold Eagle Co. bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

Prepared by: Mike Profetto

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MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: ULTRA LOW SULFUR #1 DIESEL Product Description: Hydrocarbons and Additives Product Code: 708118-00, 97AJ19, 97AJ21 Intended Use: Fuel

COMPANY IDENTIFICATION

Supplier:

EXXON MOBIL CORPORATION

3225 GALLOWS RD. FAIRFAX, VA. 22037 24 Hour Health Emergency Transportation Emergency Phone ExxonMobil Transportation No. Product Technical Information MSDS Internet Address

USA 609-737-4411 800-424-9300 281-834-3296 800-662-4525, 800-947-9147 http://www.exxon.com, http://www.mobil.com

SECTION 2

COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
FATTY ACIDS, METHYL ESTERS		0 - 5%
KEROSENE	8008-20-6	> 95 %

Hazardous Constituent(s) Contained in Complex Substance(s)

Name	CAS#	Concentration*
ETHYL BENZENE	100-41-4	0.1 - 1%
NAPHTHALENE	91-20-3	0.1 - 1%

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

SECTION 3

HAZARDS IDENTIFICATION

This material is considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL PHYSICAL / CHEMICAL EFFECTS

Combustible. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an incendiary electrical discharge.

POTENTIAL HEALTH EFFECTS

Irritating to skin. If swallowed, may be aspirated and cause lung damage. May be irritating to the eyes, nose, throat, and lungs. Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. High-pressure injection under skin may cause serious damage.

Target Organs: Lung | Skin |



Product Name: ULTRA LOW SULFUR #1 DIESEL Revision Date: 03 Nov 2009 Page 2 of 11

ENVIRONMENTAL HAZARDS

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID:	Health:	2	Flammability:	2	Reactivity:	0
HMIS Hazard ID:	Health:	2	Flammability:	2	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4	FIRST AID MEASURES	

Inhalation

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek inmediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

Hydrocarbon Solvents/Petroleum Hydrocarbons- Skin contact may aggravate an existing dermatitis.

SECTION 5

FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.



Product Name: ULTRA LOW SULFUR #1 DIESEL Revision Date: 03 Nov 2009 Page 3 of 11

Unusual Fire Hazards: Flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Sulfur Oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: >38C (100F) [ASTM D-93] Flammable Limits (Approximate volume % in air): LEL: 0.7 UEL: 5.0 Autoignition Temperature: N/D

ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

SECTION 6

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Water Spill: Stop leak if you can do it without risk. Eliminate sources of ignition. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.



Product Name: ULTRA LOW SULFUR #1 DIESEL Revision Date: 03 Nov 2009 Page 4 of 11

SECTION 7

HANDLING AND STORAGE

HANDLING

Avoid contact with skin. Do not siphon by mouth. Use proper bonding and/or grounding procedures. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

Static Accumulator: This material is a static accumulator.

STORAGE

Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be grounded and bonded. Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Source	Form	Limit / S	tandard		NOTE	Source
ETHYL BENZENE		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		STEL	125 ppm		N/A	ACGIH
ETHYL BENZENE		TWA	100 ppm		N/A	ACGIH
KEROSENE	Stable Aerosol.	TWA	5 mg/m3		N/A	ExxonMobil
KEROSENE	Vapor.	TWA	200 mg/m3		N/A	ExxonMobil
KEROSENE [as total hydrocarbon vapor]	Non-Aerosol	TWA	200 mg/m3		Skin	ACGIH
NAPHTHALENE		TWA	50 mg/m3	10 ppm	N/A	OSHA Z1
NAPHTHALENE		STEL	15 ppm		Skin	ACGIH
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use



Product Name: ULTRA LOW SULFUR #1 DIESEL Revision Date: 03 Nov 2009 Page 5 of 11

with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include: Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State:LiquidColor:Clear (May Be Dyed)Odor:Petroleum/SolventOdor Threshold:N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

 Relative Density (at 15 C):
 0.73

 Flash Point [Method]:
 >38C (100F) [ASTM D-93]

 Flammable Limits (Approximate volume % in air):
 LEL:
 0.7
 UEL:
 5.0

 Autoignition Temperature:
 N/D

 Boiling Point / Range:
 > 150C (302F)
 Vapor Density (Air = 1):
 N/D



Product Name: ULTRA LOW SULFUR #1 DIESEL Revision Date: 03 Nov 2009 Page 6 of 11

Vapor Pressure:< 0.027 kPa (0.2 mm Hg) at 20 C</td>Evaporation Rate (N-Butyl Acetate = 1):N/DpH:N/ALog Pow (n-Octanol/Water Partition Coefficient):> 3.5Solubility in Water:NegligibleViscosity:1 cSt (1 mm²/sec) at 40 C - 2.1 cSt (2.1 mm²/sec) at 40 COxidizing Properties:See Sections 3, 15, 16.

OTHER INFORMATION

SECTION 10

Freezing Point:N/DMelting Point:N/APour Point:-32°C (-25°F)

STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Halogens, Strong Acids, Alkalies, Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m³	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Moderately irritating to skin with prolonged exposure. Based on test data for structurally similar materials.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

For the product itself:

Vapor/aerosol concentrations above recommended exposure levels are irritating to the eyes and respiratory

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Product Name: ULTRA LOW SULFUR #1 DIESEL Revision Date: 03 Nov 2009 Page 7 of 11

tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects including death.

Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Contains:

Kerosene: Carcinogenic in animal tests. Lifetime skin painting tests produced tumors, but the mechanism is due to repeated cycles of skin damage and restorative hyperplasia. This mechanism is considered unlikely in humans where such prolonged skin irritation would not be tolerated. Did not cause mutations In vitro. Inhalation of vapors did not result in reproductive or developmental effects in laboratory animals. Inhalation of high concentrations in animals resulted in respiratory tract irritation, lung changes and some reduction in lung function. Non-sensitizing in animal tests.

NAPHTHALENE: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

ETHYLBENZENE: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

Additional information is available by request.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ETHYL BENZENE	100-41-4	5
NAPHTHALENE	91-20-3	2, 5

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

High molecular wt. component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Majority of components -- Expected to be inherently biodegradable

Atmospheric Oxidation:

More volatile component -- Expected to degrade rapidly in air

BIOACCUMULATION POTENTIAL



Product Name: ULTRA LOW SULFUR #1 DIESEL Revision Date: 03 Nov 2009 Page 8 of 11

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13

DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14

TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: KEROSENE Hazard Class & Division: COMBUSTIBLE LIQUID ID Number: 1223 Packing Group: Ш Marine Pollutant: Yes **ERG Number:** 128 NONE Label(s): Transport Document Name: UN1223, KEROSENE, COMBUSTIBLE LIQUID, PG III, MARINE POLLUTANT

Footnote: The flash point of this material is greater than 100 F. Regulatory classification of this material varies. DOT: Flammable liquid or combustible liquid. OSHA: Combustible liquid. IATA/IMO: Flammable liquid. This material is not regulated under 49 CFR in a container of 119 gallon capacity or less when transported solely by land, as long as the material is not a hazardous waste, a marine pollutant, or specifically listed as a hazardous substance.

LAND (TDG)

Proper Shipping Name:KEROSENEHazard Class & Division:3UN Number:1223Packing Group:III



Product Name: ULTRA LOW SULFUR #1 DIESEL Revision Date: 03 Nov 2009 Page 9 of 11

SEA (IMDG) Proper Shipping Name: KERC Hazard Class & Division: 3 EMS Number: F-E, S-E UN Number: 1223 Packing Group: III Marine Pollutant: Yes Label(s): 3 Transet Deservement Name	
Transport Document Name:	UN1223, KEROSENE, 3, PG III, (37.8°C c.c.), MARINE POLLUTANT
AIR (IATA) Proper Shipping Name: KERC Hazard Class & Division: 3 UN Number: 1223 Packing Group: III Label(s) / Mark(s): 3	
Transport Document Name:	UN1223, KEROSENE, 3, PG III
SECTION 15	REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: AICS, DSL, EINECS, ENCS, KECI, PICCS, TSCA

EPCRA: This material contains no extremely hazardous substances.

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. Immediate Health.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
ETHYL BENZENE	100-41-4	0.1 - 1%
NAPHTHALENE	91-20-3	0.1 - 1%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ETHYL BENZENE	100-41-4	1, 4, 10
KEROSENE	8008-20-6	1, 17, 18, 19
NAPHTHALENE	91-20-3	1, 4, 5, 9, 10



Product Name: ULTRA LOW SULFUR #1 DIESEL Revision Date: 03 Nov 2009 Page 10 of 11

REGULATORY LISTS SEARCHED			
1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16	OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes: Composition: Component Table was modified. Section 06: Notification Procedures - Header was modified. Section 16: Precautions - Header was modified. Section 08: Personal Protection - Header was modified. **THIS MSDS COVERS THE FOLLOWING MATERIALS:** DIESEL NO. 1 | ESSO DIESEL FUEL NO. 1 | EXXON DIESEL FUEL NO. 1 | LOW SULFUR DIESEL NO. 1 | MOBIL DIESEL FUEL NO. 1 | ULTRA LOW SULFUR DIESEL NO. 1 | WINTERIZED DIESEL FUEL NO. 1

PRECAUTIONARY LABEL TEXT:

Contains: KEROSENE

WARNING!

HEALTH HAZARDS

Irritating to skin. If swallowed, may be aspirated and cause lung damage. **Target Organs:** Lung | Skin |

PHYSICAL HAZARDS

Combustible. Material can accumulate static charges which may cause an incendiary electrical discharge.

PRECAUTIONS

Avoid contact with skin. Do not siphon by mouth. Use proper bonding and/or grounding procedures.

FIRST AID

Eye: Flush thoroughly with water. If irritation occurs, get medical assistance.

Oral: Seek immediate medical attention. Do not induce vomiting.

Skin: Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

FIRE FIGHTING MEDIA

Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

SPILL/LEAK

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you



Product Name: ULTRA LOW SULFUR #1 DIESEL Revision Date: 03 Nov 2009 Page 11 of 11

can do it without risk. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Water Spill: Stop leak if you can do it without risk. Eliminate sources of ignition. Report spills as required to appropriate authorities. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

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Internal Use Only MHC: 1A, 0, 0, 0, 3, 1

PPEC: C

DGN: 2000440XUS (1016820)

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SAFETY DATA SHEET

1. Identification

Product identifier	Dot 3 – Premium Brake Fluid	
Other means of identification		
Product code	H-130 (21-b)	
Recommended use	Brake fluid.	
Recommended restrictions	None known.	
Manufacturer / Importer / Supplier / Distributor information		
Manufacturer/Supplier	Federal-Mogul World Headquarters 26555 Northwestern Highway Southfield, Michigan 48033 USA	
Contact person:	msds.request@federalmogul.com	
Emergency Telephone:	24hr EP (INFOTRAC): 1-800-535-5053 International: (001) 352-323-3500	
Non-emergency	1-248-354-9844	

Telephone:

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Reproductive toxicity	Category 2
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Causes serious eye damage. Causes skin irritation. Suspected of damaging fertility or the unborn child.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Wear protective gloves/eye protection/face protection.
Response	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. IF exposed or concerned: Get medical advice/attention. If exposed or concerned: Get medical advice/attention. If exposed or concerned: Get medical advice/attention.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Not classified.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Triethylene glycol monobutyl ether	143-22-6	25-29
Diethylene glycol	111-46-6	16-20
Polyethylene glycol hexylether	112-59-4	11-15

2-(2-Butoxyethoxy)-ethanol	112-34-5 10-14
Triethylene glycol methyl ethe	r 112-35-6 7-11
Polyethylene glycol	25322-68-3 4-8
Diethylene glycol monoethyl ether	111-90-0 3-6
2-(2-propoxyethoxy)ethanol	6881-94-3 2-6
Triethylene glycol ethyl ether	112-50-5 2-6
Triethylene glycol	112-27-6 1-5
2-(2-Methoxyethoxy)ethanol	111-77-3 <5
Ethylene glycol	107-21-1 <5
Composition comments	All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are percent by volume.
4. First-aid measures	
Inhalation	Move injured person into fresh air and keep person calm under observation. Get medical atter if any discomfort continues.
Skin contact	Remove contaminated clothes and rinse skin thoroughly with water. Get medical attention if irritation develops or persists.
Eye contact	Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If med assistance is not immediately available, flush an additional 15 minutes.
Ingestion	Rinse mouth thoroughly with water and give large amounts of milk or water, if person is consc Only induce vomiting at the instruction of medical personnel. Get medical attention if any discomfort continues.
Most important symptoms/effects, acute and delayed	Exposed individuals may experience eye tearing, redness, and discomfort. Defats the skin.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water spray, dry powder or carbon dioxide.
Unsuitable extinguishing media	Water jet.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting: follow the general fire precau indicated in the workplace.
Fire-fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Containers close to fire should be removed immediately or cooled with water.
6. Accidental release meas	sures
Personal precautions, protective equipment and emergency procedures	Avoid contact with skin and eyes. Wear suitable protective clothing. For personal protection, s section 8 of the SDS.
Methods and materials for containment and cleaning up	Remove sources of ignition. Absorb spillage with non-combustible, absorbent material. Collec containers and seal securely.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage	
Precautions for safe handling	Avoid contact with skin and eyes. Wear appropriate personal protective equipment. Observe g industrial hygiene practices. Use Personal Protective Equipment recommended in section 8 or SDS. Pregnant women should not work with the product, if there is the least risk of exposure.
Conditions for safe storage, including any incompatibilities	Keep container in a well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Туре	Value	Form
2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5)	STEL	10 ppm	Inhalable fraction and vapor.
Ethylene glycol (CAS 107-21-1)	Ceiling	100 mg/m3	Aerosol.

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Туре	Value	Form
Diethylene glycol monoethyl ether (CAS 111-90-0)	TWA	140 mg/m3	
, ,		25 ppm	
Diethylene glycol (CAS 111-46-6)	TWA	10 mg/m3	
Polyethylene glycol (CAS 25322-68-3)	TWA	10 mg/m3	Particulate.
Triethylene glycol (CAS 112-27-6)	TWA	10 mg/m3	Particulate.

Biological limit values

controls

No biological exposure limits noted for the ingredient(s). Appropriate engineering Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection	Chemical goggles and face shield are recommended.	
Skin protection		
Hand protection	Chemical resistant gloves. Butyl rubber gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.	
Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.	
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134. Respirator type: High-efficiency particulate respirator.	
Thermal hazards	When material is heated, wear gloves to protect against thermal burns.	
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements.	

9. Physical and chemical properties

Appearance	Light amber liquid.
Physical state	Liquid.
Form	Liquid.
Color	Light amber.
Odor	Mild.
Odor threshold	Not available.
рН	9.5 - 10.5
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 401 °F (> 205 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or exp	losive limits
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.

	Netevelleble
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.028 - 1.036 (20°C)
Solubility(ies)	Soluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal temperature conditions. Glycol Ethers can form peroxides on storage – do not distil to dryness.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Avoid exposure to high temperatures or direct sunlight.
Incompatible materials	Strong oxidizing agents. Strong bases.
Hazardous decomposition products	Carbon dioxide. Carbon monoxide.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May cause discomfort if swallowed.
Inhalation	Glycol does not easily form a vapour at normal temperatures. Therefore, it must be heated or misted before inhalation exposure can occur.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.
Symptoms related to the physical, chemical and toxicological characteristics	Exposed individuals may experience eye tearing, redness, and discomfort. Defats the skin.

Test Results

2700 mg/kg

4500 mg/kg

6540 mg/kg

5500 mg/kg

8476 mg/kg

5.54 g/kg

9530 mg/kg

Information on toxicolog	lical effects	
Acute toxicity	May cause discomfort if swallowed.	
Components	Species	
2-(2-Butoxyethoxy)-ethance	bl (CAS 112-34-5)	
Acute		
Dermal		
LD50	Rabbit	
Oral		
LD50	Rat	
2-(2-Methoxyethoxy)ethan	iol (CAS 111-77-3)	
Acute		
Dermal		
LD50	Rabbit	
Oral		
LD50	Rat	
Diethylene glycol monoeth	yl ether (CAS 111-90-0)	
Acute		
Dermal		
LD50	Rabbit	
Oral		

 LD50
 Rabbit

 Dot 3 – Premium Brake Fluid

 915304
 Version #: 01

 Revision date: Issue date: 08-August-2013

Rat

LD50

Ethylene glycol (CAS 107-21-1) Acute Dermal

Components	Species	Test Results	
Oral LD50	Rat	4700 mg/kg	
Polyethylene glycol hexylether (C		4700 mg/kg	
Acute	-0 112-00- 1)		
Dermal			
LD50	Rabbit	1500 mg/kg	
Oral			
LD50	Rat	3.73 ml/kg	
Triethylene glycol (CAS 112-27-6))		
Acute			
Dermal			
LD50	Rabbit	22460 mg/kg	
Oral			
LD50	Rat	15000 - 22000 mg/kg	
Triethylene glycol ethyl ether (CA	S 112-50-5)		
Acute			
Dermal	Rabbit		
LD50	Rabbi	8200 mg/kg	
Oral LD50	Rat	10600 ma/ka	
		10600 mg/kg	
Triethylene glycol methyl ether (C	AS 112-35-6)		
Acute Dermal			
LD50	Rabbit	7100 mg/kg	
Oral	Rubbit	i loo nigikg	
LD50	Rat	11300 mg/kg	
Triethylene glycol monobutyl ethe			
Acute	(0/10/140/22-0)		
Dermal			
LD50	Rabbit	3.54 ml/kg	
Oral			
LD50	Rat	5300 mg/kg	
Skin corrosion/irritation	Causes skin irritation.		
Serious eye damage/eye	Causes serious eye damage.		
irritation			
Respiratory sensitization	No data available.		
Skin sensitization	Not a skin sensitizer.		
Germ cell mutagenicity	No data available.		
Carcinogenicity	No data available.		
Reproductive toxicity	Suspected of damaging fertility or the unborn c	hild.	
Specific target organ toxicity - single exposure	No data available.		
Specific target organ toxicity - repeated exposure	No data available.		
Aspiration hazard	No data available.		
Further information	Glycol Ethers: Some glycol ethers cause adverse effects in animals that include the reproductive system, offspring, blood, kidney and liver. Organic solvents may be absorbed into the body by inhalation and cause permanent damage to the nervous system, including the brain.		
12. Ecological information	1		
Ecotoxicity		y hazardous. However, this does not exclude the	

possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species		Test Results
2-(2-Methoxyethoxy)ethanol ((CAS 111-77-3)			
Aquatic				
Fish	LC50	Bluegill (Lepon	nis macrochirus)	7500 mg/l, 96 hours
Diethylene glycol monoethyl e	ether (CAS 111-9	90-0)		
Aquatic				
Fish	LC50	Bluegill (Lepon	nis macrochirus)	> 10000 mg/l, 96 hours
Ethylene glycol (CAS 107-21-	-1)			
Aquatic				
Fish	LC50	Fathead minno	w (Pimephales promelas)	8050 mg/l, 96 hours
Polyethylene glycol (CAS 253	322-68-3)			
Aquatic				
Fish	LC50	Atlantic salmor	n (Salmo salar)	> 1000 mg/l, 96 hours
Triethylene glycol (CAS 112-2	27-6)			
Aquatic				
Fish	LC50	Bluegill (Lepon	nis macrochirus)	> 10000 mg/l, 96 hours
rsistence and degradability	Expected to b	e inherently biod	legradable. Expected to be	e readily biodegradable.
paccumulative potential	Potential to bi	oaccumulate is lo	OW.	
Partition coefficient n-octar Diethylene glycol monoethyl o Ethylene glycol (CAS 107-21- 2-(2-Butoxyethoxy)-ethanol (0 Polyethylene glycol hexylethe	ether (CAS 111-4 -1) CAS 112-34-5)	90-0)	-0.54 -1.36 0.56 1.7	
bility in soil	No data availa	able.		
bility in general	The product is water soluble and may spread in water systems.			
her adverse effects	No data availa	able.		
. Disposal consideration	ns			
sposal instructions	Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.			
cal disposal regulations	Dispose of in accordance with local regulations.			

Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Waste codes should be assigned by the user based on the application for which the product was used.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as a hazardous material by DOT.

ΙΑΤΑ

Not regulated as a dangerous good.

IMDG

Not regulated as a dangerous good.

Transport in bulk according to Not applicable. Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

US federal regulations This product is hazardous according to OSHA 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5)	LISTED
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)	LISTED
Diethylene glycol monoethyl ether (CAS 111-90-0)	LISTED

Ethylene glycol (CAS 107-21-1)	LISTED
Polyethylene glycol hexylether (CAS 112-59-4)	LISTED
Triethylene glycol ethyl ether (CAS 112-50-5)	LISTED
Triethylene glycol methyl ether (CAS 112-35-6)	LISTED
Triethylene glycol monobutyl ether (CAS 143-22-6)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No
SARA 311/312 Hazardous chemical	Yes

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5) 2-(2-Methoxyethoxy)ethanol (CAS 111-77-3) Diethylene glycol monoethyl ether (CAS 111-90-0) Ethylene glycol (CAS 107-21-1) Polyethylene glycol hexylether (CAS 112-59-4) Triethylene glycol ethyl ether (CAS 112-50-5) Triethylene glycol methyl ether (CAS 112-35-6) Triethylene glycol monobutyl ether (CAS 143-22-6)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.
Food and Drug Administration (FDA)	Not regulated.

US state regulations

This product does not contain a chemical known to the State of California to cause cancer.

US. Massachusetts RTK - Substance List

2-(2-Methoxyethoxy)ethanol (CAS 111-77-3) Ethylene glycol (CAS 107-21-1)

US. New Jersey Worker and Community Right-to-Know Act

2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5)	500 lbs
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)	500 lbs
Diethylene glycol monoethyl ether (CAS 111-90-0)	500 lbs
Ethylene glycol (CAS 107-21-1)	500 lbs
Polyethylene glycol hexylether (CAS 112-59-4)	500 lbs
Triethylene glycol ethyl ether (CAS 112-50-5)	500 lbs
Triethylene glycol methyl ether (CAS 112-35-6)	500 lbs
Triethylene glycol monobutyl ether (CAS 143-22-6)	500 lbs

US. Pennsylvania RTK - Hazardous Substances

2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5) 2-(2-Methoxyethoxy)ethanol (CAS 111-77-3) Diethylene glycol (CAS 111-46-6) Diethylene glycol monoethyl ether (CAS 111-90-0) Ethylene glycol (CAS 107-21-1) Polyethylene glycol hexylether (CAS 112-59-4) Triethylene glycol (CAS 112-27-6) Triethylene glycol ethyl ether (CAS 112-50-5) Triethylene glycol methyl ether (CAS 112-35-6) Triethylene glycol monobutyl ether (CAS 143-22-6)

US. Rhode Island RTK

2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5) 2-(2-Methoxyethoxy)ethanol (CAS 111-77-3) Diethylene glycol monoethyl ether (CAS 111-90-0) Ethylene glycol (CAS 107-21-1) Polyethylene glycol hexylether (CAS 112-59-4) Triethylene glycol ethyl ether (CAS 112-50-5) Triethylene glycol methyl ether (CAS 112-35-6) Triethylene glycol monobutyl ether (CAS 143-22-6)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

Toxic Substances Control Act (TSCA) Inventory United States & Puerto Rico

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	08-August-2013
Revision date	-
Version #	01
NFPA Ratings	



References

Disclaimer

HSDB® - Hazardous Substances Data Bank Registry of Toxic Effects of Chemical Substances (RTECS)

The information provided on this data sheet was abstracted from supplier material safety data sheets and standard references in occupational health and toxicology. Federal-Mogul makes no representation or warranty with respect to the information obtained from such references. The information is however, as of the date provided, true and accurate to the best of Federal-Mogul's knowledge, and should be used to make an independent determination of the methods to safeguard workers and the environment.

MATERIAL SAFETY DATA SHEET DRILLING PAPER

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME:	DRILLING PAPER
OTHER NAME:	Ground / shredded paper
APPLICATIONS:	Oil well drilling fluid additive. Lost circulation material
EMERGENCY TELEPHONE:	281-561-1600
SUPPLIER:	Supplied by a Business Unit of M-I L.L.C.
	P.O. Box 42842, Houston, Texas 77242-2842
and an exception of the second se	See cover sheet for local supplier.
TELEPHONE:	281-561-1509
FAX:	281-561-7240
CONTACT PERSON:	Sam Hoskin - Manager, Occupational Health

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME:	CAS No .:	CONTENTS :	EPA RQ:	TPQ:	
Particulates Not Otherwise Classifi-		100 %			
ed (PNOC)					

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION! MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. Avoid contact with eyes, skin and clothing. Avoid breathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

This product is a/an Off-white fibrous material. May form explosive dust-air mixtures. Slippery when wet.

ACUTE EFFECTS:

HEALTH HAZARDS, GENERAL:

Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may lead to pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma. Dermatitis and asthma may result from short contact periods.

INHALATION: May be irritating to the respiratory tract if inhaled.

INGESTION: May cause gastric distress, nausea and vomiting if ingested.

SKIN: May be irritating to the skin.

EYES: May be irritating to the eyes.

CHRONIC EFFECTS:

CARCINOGENICITY:

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

ROUTE OF ENTRY:

Inhalation. Skin and/or eye contact.

TARGET ORGANS:

Respiratory system, lungs. Skin. Eyes.

4. FIRST AID MEASURES

GENERAL: Persons seeking medical attention should carry a copy of this MSDS with them.

- INHALATION: Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.
- **INGESTION:** Drink a couple of glasses water or milk. Do not give victim anything to drink of he is unconscious. Get medical attention.
- SKIN: Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.
- EYES: Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5. FIRE FIGHTING MEASURES

FLAMMABILITY LIMIT - LOWER(%): N/D FLAMMABILITY LIMIT - UPPER(%): N/D

EXTINGUISHING MEDIA:

Carbon dioxide (CO2). Dry chemicals. Foam. Water spray, fog or mist.

SPECIAL FIRE FIGHTING PROCEDURES: No specific fire fighting procedure given.

UNUSUAL FIRE & EXPLOSION HAZARDS:

Dust in high concentrations may form explosive mixtures with air.

HAZARDOUS COMBUSTION PRODUCTS:

Irritating gases/vapors/fumes. Oxides of: Carbon.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Wear proper personal protective equipment (see MSDS Section 8).

SPILL CLEAN-UP PROCEDURES:

Avoid generating and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Do not contaminate drainage or waterways. Repackage or recycle if possible.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS:

Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation. Mechanical ventilation or local exhaust ventilation is required.

STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

INGREDIENT NA			OSHA I	PEL:	ACGIH	TLV:	OTHER	2:	
Particulates Not Otl ed (PNOC)		CAS No.:	TWA: 5	STEL:	TWA: 3	STEL:	TWA:	STEL:	UNITS: mg/m3 resp.dus
PROTECTIVE EC	UIPMENT:	1200	226.5						
			10.01	S					
			U	6					
ENGINEERING C	ONTROLS:								
	Use appropriate enginee and keep worker exposu			entilation	and proc	ess enclos	ure, to red	duce air co	ontamination
VENTILATION:	Supply natural or mecha applicable limits.	unical ventilation ade	quate to ex	haust airt	orne proc	luct and k	eep expos	sures below	w the
RESPIRATORS:	Use at least a NIOSH-aj containing oil mist/aero respirator.	oproved N95 half-ma sol use at least a NIC	isk disposal SH-approv	ole or reu ed P95 h	seable par alf-mask o	ticulate re lisposable	spirator. or reusea	In work e able partic	nvironments ulate
PROTECTIVE GL	OVES: Use suitable protective ;	gloves if risk of skin	contact.						
			1.1						
EYE PROTECTIC	WIL duct an aistant onfo	y goggles where the	re is danger	of eye co	ontact.				
EYE PROTECTIC	wear dust resistant sale	10.11. A.A.							
EYE PROTECTIC	OTHING:		1						
		ng to prevent repeate	d or prolon	ged skin	contact.				

APPEARANCE/PHYSICAL STATE: COLOR: ODOR: SOLUBILITY DESCRIPTION: VAPOR DENSITY (air=1): VAPOR PRESSURE: Powder, dust. Off-white. Odorless or no characteristic odor. Insoluble in water. N/D N/D TEMPERATURE (°F):

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID: Avoid heat.

HAZARDOUS POLYMERIZATION: Will not polymerize.

POLYMERIZATION DESCRIPTION: Not relevant.

MATERIALS TO AVOID: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: No toxicological data is available for this product.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:

Contact M-I Environmental Affairs for ecological information.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT:

This product does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc, may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

DISPOSAL METHODS:

Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

PRODUCT RQ:	N/A
U.S. DOT:	NT-0
U.S. DOT CLASS:	Not regulated.
CANADIAN TRANSPORT:	and the second second
TDGR CLASS:	Not regulated.
SEA TRANSPORT:	
IMDG CLASS:	Not regulated.
AIR TRANSPORT:	
ICAO CLASS:	Not regulated.

15. REGULATORY INFORMATION

REGULATORY STATUS OF INGRED	IENTS:					
NAME:	CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
Particulates Not Otherwise Classifi- ed (PNOC)		N/A	N/A	N/A	N/A	N/A
US FEDERAL REGULATIONS: WASTE CLASSIFICATION:	Not a hazardou	is waste by	U.S. RCRA	criteria. See Se	ction 13.	
REGULATORY STATUS:	This Product or meant to be all					regulations (Not
	SECTION 313 requirements o Reauthorization	f Section 31	3 of Title III	of the Superfi	hemical subject and Amendmen	to the reporting t and
	SARA 311 Cat 1: Immediate (.		th Effects.			
	The componen international ch TSCA (U.S.) DSL (Canada)			ed on or are ex	empt from the	following
STATE REGULATIONS: STATE REGULATORY STATUS:	This product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):.					
	None.					
4		fe Drinking	Water and T	oxic Enforcem	ent Act of 1986	ered by the State of 5 as causing cancer o
CANADIAN REGULATIONS:						
REGULATORY STATUS:	This Material S Product Regula	Safety Data ations.	Sheet has be	en prepared in	compilance wit	th the Controled
	Canadian WHN	VIIS Classif	ication: Not a	a Controlled Pr	roduct.	
16. OTHER INFORMATION						

NPCA HMIS HAZARD INDEX: FLAMMABILITY: REACTIVITY: NPCA HMIS PERS. PROTECT. INDEX: 0 Minimal Hazard 1 Slight Hazard 0 Minimal Hazard E - Safety Glasses, Gloves, Dust Respirator

USER NOTES:

N/A = Not applicable N/D = Not determined

OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants.
ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition).
Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997).
Product information provided by the commercial vendor(s).
Sam Hoskin/bb
1 / July 27, 1995
Approved.

DISCLAIMER:

R

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditiions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



Drillube®

Material Safety Data Sheet

1. Product and Company Identification			
Product Name:	Drillube®		
MSDS Number:	720930		
Synonyms/Other Means of Identification:	76 Drillube 32 76 Drillube 46 76 Drillube 100 76 Drillube 150 76 Drillube 320		
Intended Use:	Rock Drill Oil		
Manufacturer:	ConocoPhillips Lubricants 600 N. Dairy Ashford, 2W900 Houston, Texas 77079-1175		
Emergency Health and Safety Number:	Chemtrec: 800-424-9300 (24 Hours)		
Customer Service:	U.S.: 1-800-822-6457 or International: +1-83-2486-3363		
Technical Information:	1-877-445-9198		
MSDS Information:	Phone: 800-762-0942 Email: MSDS@conocophillips.com http://www.conocophillips.com/EN/products/Pages/msds.aspx		

2. Hazards Identification		
Emergency Overview	NFPA	
This material is not considered hazardous according to OSHA criteria.		

Appearance: Clear and bright Physical Form: Liquid Odor: Petroleum

Potential Health Effects

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Contact may cause mild skin irritation including redness and a burning sensation. Repeated exposure may cause skin dryness or cracking. No harmful effects from skin absorption are expected.

Inhalation (Breathing): Not expected to be toxic.

Ingestion (Swallowing): Low degree of toxicity by ingestion.

Signs and Symptoms: Inhalation of oil mists or vapors generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea.

Pre-Existing Medical Conditions: Conditions which may be aggravated by exposure include skin disorders.

See Section 11 for additional Toxicity Information.

3. Composition / Information on Ingredients

Component	CASRN	Concentration*
Lubricant Base Oil (Petroleum)	VARIOUS	>95
Additives	PROPRIETARY	<5

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention.

Inhalation (Breathing): First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion (Swallowing): First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Notes to Physician: Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

5. Fire-Fighting Measures

NFPA 704 Hazard Class

Health: 0 Flammability: 1 Instability: 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F / 100°C. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Fire Fighting Instructions: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of sulfur, nitrogen or phosphorus may also be formed.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

6. Accidental Release Measures

Personal Precautions: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods for Containment and Clean-Up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents).

7. Handling and Storage

Precautions for safe handling: Keep away from flames and hot surfaces. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

Conditions for safe storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

8. Exposure Controls / Personal Protection

Component	US-ACGIH	OSHA	Other
Lubricant Base Oil (Petroleum)	TWA: 5mg/m ³	TWA: 5 mg/m ³	
	STEL: 10 mg/m ³	as Oil Mist, if generated	
	as Oil Mist, if generated		

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

Skin/Hand Protection: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Suggested protective materials: Nitrile

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with R or P95 filters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

9. Physical and Chemical Properties

9. Physical and Chemical Properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance:	Clear and bright
Physical Form:	Liquid
Odor:	Petroleum
Odor Threshold:	No data
pH:	Not applicable
Vapor Pressure:	<1
Vapor Density (air=1):	>1
Boiling Point/Range:	No data
Melting/Freezing Point:	<5°F / <-15°C
Pour Point:	<5°F / <-15°C
Solubility in Water:	Insoluble
Partition Coefficient (n-octanol/water) (Kow):	No data
Specific Gravity (water=1):	0.85 - 0.88 @ 60°F (15.6°C)
Bulk Density:	7.2 - 7.5 lbs/gal
Viscosity:	5 - 25 cSt @ 100°C; 32 - 320 cSt @ 40°C
Percent Volatile:	Negligible
Evaporation Rate (nBuAc=1):	<1
Flash Point:	>302°F / >150°C
Test Method:	Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010
LEL (vol % in air):	No data
UEL (vol % in air):	No data
Autoignition Temperature:	No data

10. Stability and Reactivity

Stability: Stable under normal ambient and anticipated conditions of use.

Conditions to Avoid: Extended exposure to high temperatures can cause decomposition. Avoid all possible sources of ignition.

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous Decomposition Products: Not anticipated under normal conditions of use.

Hazardous Polymerization: Not known to occur.

11. Toxicological Information

Chronic Toxicity:

Lubricant Base Oil (Petroleum)

Carcinogenicity: The petroleum base oils contained in this product have been highly refined by a variety of processes including severe hydrocracking/hydroprocessing to reduce aromatics and improve performance characteristics. All of the oils meet the IP-346 criteria of less than 3 percent PAH's and are not considered carcinogens by NTP, IARC, or OSHA.

Acute Toxicity:

Component	Oral LD50	Dermal LD50	Inhalation LC50
Lubricant Base Oil (Petroleum)	> 5 g/kg	> 2 g/kg	> 5 mg/L

12. Ecological Information

Ecotoxicity: Experimental studies show that acute aquatic toxicity values are greater than 1000 mg/l. These values are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions.

Mobility: Volatilization to air is not expected to be a significant fate process due to the low vapor pressure of this material. In water, base oils will float and spread over the surface at a rate dependent upon viscosity. There will be significant removal of hydrocarbons from the water by sediment adsorption. In soil and sediment, hydrocarbon components will show low mobility with adsorption to sediments being the predominant physical process. The main fate process is expected to be slow biodegradation of base oil components in soil and sediment.

Persistence and degradability: The hydrocarbons in this material are not readily biodegradable, but since they can be degraded by microorganisms, they are regarded as inherently biodegradable.

Bioaccumulation Potential: Log Kow values measured for the hydrocarbon components of this material range from 4 to over 6, and therefore regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

13. Disposal Considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

This material under most intended uses would become "Used Oil" due to contamination by physical or chemical impurities. Whenever possible, Recycle Used Oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

14. Transportation Information

U.S. Department of Transport	ation (DOT)
Shipping Description:	Not regulated
Note:	If shipped by land in a packaging having a capacity of 3,500 gallons or more, the provisions of 49 CFR, Part 130 apply. (Contains oil)
International Maritime Danger	ous Goods (IMDG)
Shipping Description:	Not regulated
Note:	U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 25.
International Civil Aviation Or	g. / International Air Transport Assoc. (ICAO/IATA)
UN/ID #:	Not regulated
Note:	U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 24.

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:			
Max. Net Qty. Per Package:			

15. Regulatory Information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Acute Health:	No
Chronic Health:	No
Fire Hazard:	No
Pressure Hazard:	No
Reactive Hazard:	No

CERCLA/SARA - Section 313 and 40 CFR 372:

This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

EPA (CERCLA) Reportable Quantity (in pounds):

This material does not contain any chemicals with CERCLA Reportable Quantities.

Page 6/6 Status: FINAL

California Proposition 65:

This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

Canadian Regulations:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Regulations.

WHMIS Hazard Class None

National Chemical Inventories:

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA. All components are either on the DSL, or are exempt from DSL listing requirements.

U.S. Export Control Classification Number: EAR99

16. Other Information

Date of Issue: Status: **Previous Issue Date: Revised Sections or Basis for Revision:**

MSDS Number:

Guide to Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

15-Jan-2010 FINAL 26-Feb-2007 NFPA ratings (Sections 2&5) Environmental hazards (Section 12) 720930



OSHA-Required Health And Safety Information!

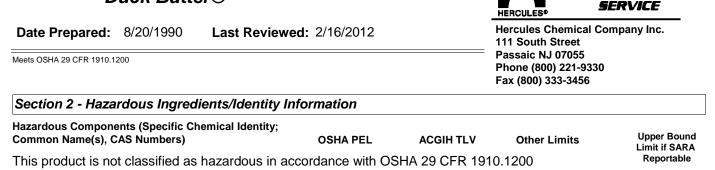
This Material Safety Data Sheet (MSDS) was requested moments ago from Hercules Automated Fax Information System. Please forward it immediately to the person in charge of MSDS's, or retain it at the machine until claimed.

> MATERIAL SAFETY

FORMATION

Section 1

MATERIAL SAFETY DATA SHEET # 74 Duck Butter®



HMIS Hazard Rating: Health: 0 Flammability: 0 Reactivity: 0 Personal Protection: A

Section 3 - Physical/	Chemical Characterist	ics			
Boiling Point (°F):		Specific Gravity (H2O = 1):	Vapor Density (Air = 1):	•	r Pressure m Hg):
>180		1.121	N/A		N/A
Melting Point (° F)	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:			
N/A	N/A	Complete		VOC Level:	33%
Appearance And Color:	Tan colored paste		Odor: Mild od	or	
Section 4 - Fire And	Explosion Hazard Dat	a			
Flash Point:			Flammable Limits:	LEL:	UEL:
None			Non-flammable	N/A	N/A
Extinguishing Media: N	J/A				
Special Firefighting Proc N/A	edures:				
Unusual Fire And Explos None	sion Hazards:				
Continued on Next Page					

Section 5 - Read	ctivity Data			
Stability: Stable	Conditions To Avoid:	NONE		
Incompatability (Materials To Avoid	Avoid contact with stron	g oxidizing agents.		
Hazardous Decomp	osition: NONE			
Hazardous Polymer	ization:			
Section 6 - Heal	th Hazard Data			
Routes of Entry:	Inhalation NO	Skin NO	Ingestion NO	
Health Hazards: NONE				
Carcinogenicity:	NTP NO IARC NO	OSHA Regulated NO		
Signs And Sympton	ns of Exposure:			

Signs NONE

Medical Conditions Generally Aggravated By Exposure: NONE

Emergency And First Aid Procedures:

As with any soap-like product, if eye contact or skin irritation occurs, flush with water for 5 minutes. If discomfort persists, get medical attention.

Continued on Next Page

AST!

	n Case M			
		aterial Is Released Or S	pilled:	
	or wipe u	up with paper towels	or cloth.	
Waste Disposal Met	hod:			
Flush to sewer or dispose in landfill. If large quantities are involved, dispose of in accordance with applicable regulations.				
Precautions To Be T	aken In ⊦	landling And Storing:		
NONE				
Other Precautions:				
None				
Section 8 - Cont	rol Mea	sures:		
Respiratory Protecti None required.	ion:			
Ventilation: Local	Exhaust	None	Spec	ial None
Mecha	anical	None	Othe	r: None
Gloves:	None			
Eye Protection:	None			
Other Protective Clothing:	None			
Work/Hygienic Pract	tices St	andard		



For Hercules Material Safety Data Sheets by fax anytime, day or night, just call ACTS 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.



MATERIAL SAFETY DATA SHEET

Product Trade Name: EP MUDLUBE®

03-Jan-2012

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: Synonyms: Chemical Family: Application:	EP MUDLUBE® None Organic hydrocarbon Lubricant
Manufacturer/Supplier	Baroid Fluid Services Product Service Line of Halliburton P.O. Box 1675 Houston, TX 77251 Telephone: (281) 871-4000 Emergency Telephone: (281) 575-5000
Prepared By	Chemical Compliance Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Hydrotreated light petroleum distillate	64742-47-8	10 - 30%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

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Hazard Overview
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Revision Date:

May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Combustible.

4. FIRST AID MEASURES

Inhalation	If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.
Skin	Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Ingestion	Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.
Notes to Physician	Not Applicable

EP MUDLUBE® Page 1 of 6

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Flash Point/Range (C): Flash Point Method: Autoignition Temperature (F): Autoignition Temperature (C): Flammability Limits in Air - Lowe Flammability Limits in Air - Uppe		
Fire Extinguishing Media	Carbon Dioxide, Dry Chemicals, Foam.	
Special Exposure Hazards	Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases.	
Special Protective Equipment for Fire-Fighters	r Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.	
NFPA Ratings: HMIS Ratings:	Health 1, Flammability 2, Reactivity 0 Health 1, Flammability 2, Reactivity 0	

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measure	s Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.
Environmental Precautionary Measures	Prevent from entering sewers, waterways, or low areas.
Procedure for Cleaning / Absorption	Isolate spill and stop leak where safe. Remove ignition sources and work with non- sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions	Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Launder contaminated clothing before reuse. Wash hands after use. Do not open storage containers or enter confined spaces without adequate ventilation and respiratory protection due to hydrogen sulfide accumulation.
Storage Information	Store away from oxidizers. Store in a cool well ventilated area. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 36 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.
Personal Protective Equipment	If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection	Not normally needed. But if significant exposures are possible then the following respirator is recommended: Organic vapor respirator.
Hand Protection	Impervious rubber gloves. EP MUDLUBE®

Page 2 of 6

Skin Protection

Rubber apron.

Eye Protection

Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Oxides of sulfur. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin defatting with prolonged exposure. Can dry skin.
Eye Contact	May cause eye irritation.

EP MUDLUBE® Page 3 of 6

Ingestion	Irritation of the mouth, throat, and stomach. Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not determined

Ecotoxicological Information

Acute Fish Toxicity: Acute Crustaceans Toxicity Acute Algae Toxicity:	TLM48: 181 mg/l (Arcatia tonsa) y: TLM96: 31900 ppm (Mysidopsis bahia) SPP @ 2 ppb E(B)C50: 491 mg/l (Skeletonema costatum)
Chemical Fate Information	Not determined
Other Information	Not applicable
13. DISPOSAL CONSIDER	ATIONS

Disposal Method	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT

Not restricted

DOT (Bulk)

NA1993, Combustible Liquid, N.O.S., Combustible Liquid, III (Contains Petroleum Distillates)

Canadian TDG

Not restricted

ADR

Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Transportation Information

Labels:

None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.	
EPA SARA Title III Extremely Hazardous Substances	Not applicable	
EPA SARA (311,312) Hazard Class	Acute Health Hazard Fire Hazard	
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).	
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.	
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.	
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.	
MA Right-to-Know Law	Does not apply.	
NJ Right-to-Know Law	Does not apply.	
PA Right-to-Know Law	Does not apply.	
Canadian Regulations		
Canadian DSL Inventory	Product contains one or more components not listed on the inventory.	
WHMIS Hazard Class	B3 Combustible Liquids D2B Toxic Materials	

EP MUDLUBE® Page 5 of 6

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS Not applicable

Additional Information	For additional information on the use of this product, contact your local Halliburton representative.
	For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.
Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

ES THREAD COMPOUND

Material Identification and Use

MANUFACTURER'S NAME MANUFACTURER'S ADDRESS	
EMERGENCY PHONE NUMBER	. (403) 720-7044
SUPPLIER IDENTIFIER SUPPLIER'S ADDRESS	
SUPPLIER EMERGENCY PHONE NUMBER PRODUCT IDENTIFIER	-
PRODUCT USE	

Hazardous Ingredients of Materials

LC(50)

LD(50)

Chemical Identity

Concentration CAS#/NA#/UN#

This is not a WHMIS controlled product.

Physical Data For Product

PHYSICAL STATE	Grease
ODOUR AND APPEARANCE	Brown grease with oil odor
ODOUR THRESHOLD	Not Applicable
SPECIFIC GRAVITY	0.99
VAPOUR PRESSURE	Not Applicable
VAPOUR DENSITY (air=1)	Not Applicable
EVAPORATION RATE	Not Applicable
BOILING POINT	Not Applicable
FREEZING POINT	Not Applicable
pH	Not Applicable
DENSITY (g/ml)	
COEFFICIENT OF WATER/OIL DISTRIBUTION	Not Applicable

Fire and Explosion Hazard of Product

CONDITIONS OF FLAMMABILITY	. Not Applicable
MEANS OF EXTINCTION	. Dry Chemical, Waterfog, CO2, Foam, Sand or Earth. Wear self
	contained breathing apparatus when fighting fires in confined spaces.
	Water spray is an unsuitable extinguishing agent.
FLASHPOINT AND METHOD OF DETERMINATION	. 175 DEG. C. (ASTM D92)
UPPER EXPLOSION LIMIT(% BY VOL)	. Not Available
LOWER EXPLOSION LIMIT(% BY VOL)	
AUTO-IGNITION TEMPERATURE	. Not Available
FLAMMABILITY CLASSIFICATION	
HAZARDOUS COMBUSTION PRODUCTS	
EXPLOSION DATA	. Not Applicable
SENSITIVITY TO STATIC DISCHARGE	

Reactivity Data

CHEMICAL STABILITY	. Stable
INCOMPATIBLE MATERIALS	. Keep away from strong oxidizers, excessive heat and open flames.
CONDITIONS OF REACTIVITY	. Not Available
HAZARDOUS DECOMPOSITION PRODUCTS	. CO2, CO and oxides of sulfur are generated on combustion.

Material Safety Data Sheet

ES THREAD COMPOUND

Toxicological Properties of Product

ROUTES OF ENTRY	
SKIN CONTACT	Yes
SKIN ABSORPTION	
ЕҮЕ	Yes
INHALATION	
INGESTION	N/A
ACUTE OVER EXPOSURE EFFECTS	Low order of toxicity and irritancy. May cause skin and eye irritation
	with prolonged contact.
CHRONIC OVER EXPOSURE EFFECTS	Not Available
EXPOSURE LIMITS	
IRRITANCY OF PRODUCT	May cause skin and eye irritation with prolonged contact.
SENSITIZATION TO MATERIAL	Not Applicable
CARCINOGENICITY, REPRODUCTIVE EFFECTS	Not Applicable
TERATOGENICITY, MUTAGENICITY	Not Applicable
TOXICOLOGICALLY SYNERGISTIC PRODUCTS	Not Applicable

Preventive Measures		
PERSONAL PROTECTIVE EQUIPMENT SPECIFIC ENGINEERING CONTROLS	Safety glasses with side shields. Shut off leak and dike up large spills. Absorb with an inert material such as earth, sand or vermiculite.	
LEAK AND SPILL PROCEDURES		
WASTE DISPOSAL	Dipose of in accordance with all applicable Federal/Provincial/Local regulations.	
HANDLING PROCEDURES AND EQUIPMENT		
	Keep away from strong oxidizers, excessive heat and open flames. Not Applicable. WHMIS Hazard Class Not Regulated	

First Aid Measures		
SPECIFIC FIRST AID PROCEDURES	. Eyes: Flush with water for 15 minutes - call a physician. Skin Contact: Wash thoroughly with soap and water. Inhalation: Not applicable due to low volatility of product. Ingestion: Call a physician immediately.	

Preparation Date of Material Safety Data Sheet

PREPARED BY	Safety Committee
PHONE NUMBER OF PREPARER	
DATE PREPARED	January 2, 2009

The information contained herein is based on data believed to be reliable, but is presented without guarantee or warranty and Control Chemical (1989) Corporation disclaims any liability incurred from the use thereof.

Initial Preparation Date:	1/21/2003
Last Revision Date:	2/1/2011
Effective Date:	9/4/2012

MATERIAL SAFETY DATA SHEET

Ethylene Glycol

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

OLD WORLD INDUSTRIES, LLC

4065 COMMERCIAL AVENUE

NORTHBROOK, ILLINOIS 60062

PHONE: 847-559-2000

EMERGENCY PHONE: 1-800-424-9300 (CHEMTREC)

Chemical Name:	Ethylene Glycol
Chemical Family:	Glycol
Synonyms:	M.E.G, Monoethlyene Glycol; 1, 2-Dihydroxyethane;
	1, 2-Ethanediol; Ethylene Dihydrate
Chemical Formula:	$C_2H_6O_2$
Formula Wt.:	62.08

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	CAS No.	<u>Wt %</u>
Ethylene Glycol	107-21-1	99.5%

Exposure Guidelines: <u>OSHA STANDARDS</u> - An employee's exposure to ethylene glycol shall at no time exceed the ceiling value of 50 ppm (125 mg/m3).

<u>AGGIH THRESHOLD LIMIT VALUES</u> - Ceiling Limit 50 ppm, 127 mg/m3 (1981) Vapor & mist

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PRODUCT DESCRIPTION: Ethylene glycol is a clear, colorless liquid with a faint odor.

HEALTH HAZARDS:Overexposure can cause eye and skin irritation, upper respiratory tract
irritation, and difficulty breathing. Ingestion of large quantities may be
harmful or, in extreme cases, fatal.

FIRST AID:For eye contact, flush with plenty of water. For skin contact, wash with
soap and water. If persistent irritation to eyes or skin develops, seek

medical attention. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately. If ingested, DO NOT induce vomiting. Seek medical assistance.

FIRE FIGHTING: CAUTION! Spraying with water or foam can cause frothing.

POTENTIAL HEALTH EFFECTS:

Routes of Exposure:	Skin, eyes, inhalation, ingestion.
Signs and Symptoms of Expo	sure: Incidental ingestion of small amounts of ethylene glycol is not likely to cause any significant health effects. Ingestion of large quantities may result in irritability, mental sluggishness, dizziness, malaise, abdominal or back pain. Changes in urine output and appearance, fluid retention, jaundice (yellowish skin color), kidney and liver damage, respiratory failure, and unconsciousness are evidence of severe poisoning. Death may occur in extreme cases.
Skin:	Contact with liquid may cause slight skin irritation.
Eyes:	Contact with liquid may cause slight eye irritation.
Inhalation:	Inhalation of mists or high concentrations of vapors (e.g., from hot operations) may cause upper respiratory tract irritation, headaches or nausea.
Ingestion:	Ingestion of large quantities may be harmful, and in extreme poisoning, may be fatal; causes central nervous system depression, cardiopulmonary effects, and kidney and liver damage. See "Signs and Symptoms" for more information.

DELAYED/LONG TERM EFFECTS

Carcinogenic Effects:	Ethylene glycol is not considered a carcinogen.
Mutagenic:	Ethylene glycol is not considered a mutagen.
Teratogenic:	Ethylene glycol is considered to be an animal teratogen based on studies in which high levels were given in drinking water. Inhalation and dermal exposure have not produced significant fetotoxicity or malformations in animals. See Section 11, "Toxicology", for further information.
Target Organ Effects:	Central nervous system, kidney, liver, fetus.
Medical Conditions Aggravate	ed by Exposure: Exposure to this chemical may aggravate preexisting skin and respiratory conditions.

4. FIRST AID MEASURES

Ensure physician has access to this MSDS.

Skin:	Wash with soap and water after handling material. If persistent irritation develops, get medical attention.
Eyes:	If eye contact occurs, flush with water. If persistent irritation develops, get medical attention.
Inhalation:	If inhaled, immediately remove victim to fresh air and call emergency medical care . If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion:	If quantities of this material are swallowed, immediately call physician. DO NOT induce vomiting. Never give anything by mouth or induce vomiting in an unconscious person.
Note to Physicians:	The principal toxic effects of ethylene glycol, when swallowed, are kidney damage and metabolic acidosis. Ethanol is antidotal, and early administration may block the formation of toxic metabolites of ethylene glycol in the liver. Ethanol should be given intravenously, as a 5% solution in sodium bicarbonate, at a rate of about 10ml/hr. A desired therapeutic level of ethanol in blood is 100mg/dl. Hemodialysis may be required. Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. The mechanism has not been elucidated but it appears to be noncardiogenic in origin in ventilation and positive end expiratory pressure may be applied. Correction of acidosis is essential.

5. FIRE FIGHTING MEASURES

Flashpoint (TOC):	116°C (241°F)
Auto Ignition Temp:	398°C (748°F)
LEL:	3.2% by volume
UEL:	15.3% by volume

Sensitive to Mechanical Imp	pact: No Static: No
Extinguishing Media:	Alcohol foam, water, foam, carbon dioxide, or dry chemical
Special Procedures:	Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operate in positive pressure mode.
Explosion Hazards:	For mist in air, moderate explosion hazard when exposed to flames.
Small Fire:	Dry chemical, carbon dioxide or halon.
Large Fire:	Water spray, fog or standard foam is recommended. Cool containers that are expose to flames with water from the side until well after fire is

out. If the fire involves a tank car or truck, isolate the area for 1/2 mile in all directions. Stay away from ends of tanks.

6. ACCIDENTAL RELEASE MEASURES

Large Spill:	Wear self-contained breathing apparatus and full protective clothing. Stop leak if you can do so without risk. Ventilate area. Dike area if feasible. Take up with vermiculite, dry sand, or earth.
Small Spill:	Use full protective clothing including high efficiency particulate respirator. Take up with vermiculite, dry sand, or earth.

7. HANDLING AND STORAGE

Keep containers tightly closed. Store in a cool, dry, well-ventilated location, away from strong oxidizers, potential fire hazards, and incompatible chemicals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection:	Respiratory protection is required if airborne concentration exceeds TLV. At any detectable concentration, any self-contained breathing apparatus with a full face piece and operated in a pressure-demand or other positive pressure mode or any supplied-air respirator with a full face piece and operated in a pressure- demand or other positive pressure mode in combination with an auxiliary self- contained breathing apparatus operated in pressure-demand or other positive pressure mode.
Escape:	Any air-purifying full face piece respirator (gas mask) with a chin-style or front- or back-mounted organic vapor canister or any appropriate escape-type self-contained breathing apparatus.
Skin Protection:	Protective gloves recommended when prolonged skin contact cannot be avoided. Polyethylene; Neoprene, Nitrile, Polyvinyl alcohol; Natural Rubber; Butyl Rubber. Safety shower should be available.
Eye Protection:	Safety goggles and face shield. Emergency eye wash should be available. Contact lenses should not be worn when working with this chemical.
Engineering Controls:	Use general or local exhaust ventilation to meet TLV requirements.
Special Precautions:	Trace quantities of ethylene oxide (EO) may be present in this product. While these trace quantities could accumulate in the headspace areas of storage transport vessels, they are not expected to create a condition which will result in EO concentration greater than 0.5 ppm (8 hour TWA) in the breathing zone of the workplace for appropriate applications. OSHA has established a permissible exposure limit of 1.0 ppm 8 hour TWA for EO.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless viscous liquid
Odor:	Mild odor
Boiling Point:	197°C (386°F) @ 760 mm Hg
Vapor Pressure:	0.06 mm @ 20°C (68°F)
Solubility:	Complete
Specific Gravity (H ₂ O=1):	1.12 @ 15.5°C (60.4°F)
Odor index:	3 @ 20°C (68°F)
Physical State:	Liquid
Freezing Point:	-13°C (8.6°F)
Vapor Density (air = 1):	2.1
Volatiles:	0% @ 20°C(68°F)
Evaporation Rate(BuAc=1):	0.01
Oil/Water Coefficient:	Not available

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of use.
Incompatibility:	Strong oxidizing agents, strong acids and polymerization catalysts. Contact of aqueous ethylene glycol solution with DC-energized silvered copper wires causes ignition of the latter. A mixture of phosphorus (V) sulfide, ethylene glycol, and hexane in a mantle-heated flask spontaneously overheated and exploded at an internal temperature of about 180°C. Mixing of equal weights of ethylene glycol and potassium dichromate at 100°C caused heat to evolve.
Hazardous Decomposition Products:	Acrid smoke and irritating fumes. Carbon monoxide and carbon dioxide may evolve.
Hazardous Polymerization:	Will not

occur

11. TOXICOLOGICAL INFORMATION

Irritation data:	skin-rabbit	500 mg open MILD
	eye-rabbit	12 mg/m3/3D
	eye-rabbit	500 mg/24H MILD
	eye-rabbit	100 mg/1H MILD

Mutagenic Data:	DNA Inhibition System (human: lymphocyte) 320 mml/l
	Mutation in Mammalian Somatic Cells (mouse: lymphocyte) 100 mml/l

Toxicity Data:	oral-rat	LD50:	4700 mg/kg
	intraperitoneal-rat	LD50:	5010 mg/kg
	subcutaneous-rat	LD50:	2800 mg/kg
	intravenous-rat	LD50:	3260 mg/kg
	intramuscular-rat	LD50:	3300 mg/kg
	intraperitoneal-mou	e LD50:	5614 mg/kg
	oral-mouse	LDLo:	7500 mg/kg

Classification of carcinogenicity: None

12. ECOLOGICAL CONSIDERATIONS

ECOTOXICITY VALUES:

LD50 Carassius auratus (goldfish) > 5,000 mg/1/24 hr LC50 Guppies (Poecilia reticulata) 49, 300 ppm/7 days LC50 Rainbow trout 18500 mg/1/96 hr LC50 Rainbow trout 41000 mg/1/96 hr LC50 Brown shrimp (Crangon crangon) given > 100 mg/1/48 hr aerated salt water LC50 Goldfish given 5000 mg/1/24 hr			
-	<u>cell multiplication inhibition</u> a (Pseudomonas putida):		
	ntosiphon sulcatum) and (Uronema parduczi Chatton-Lwoff): > 10,000 mg/l rella pyrenoidosa): 180,000 mg/l		
Algae (Micro	ocystis aeruginosa): 2,000 mg/l		
Green algae	(Scenedesmus quandiricuada): >10,000 mg/l		
TERRESTRIAL FATE:	When released on land, ethylene glycol, because it is completely soluble in water, may leach into the ground. Its fate in soil is unknown, although it is easily biodegraded in water, which suggests that it will biodegrade rapidly in soil.		
AQUATIC FATE:	When released into water, ethylene glycol will readily biodegrade (half-life several days). Ethylene glycol would not be expected to absorb to sediment or volatilze.		
ATMOSPHERIC:	Ethylene glycol in the vapor phase will react with hydroxyl radicals in the atmosphere. Based on ahydroxyl radical concentration of $5X10+5$ radicals/cm3, ethylene glycol is predicted to have a half-life of about 2 days in the atmosphere.		
BIODEGRADATION:	BOD - 0.47 g OXYGEN/g ETHYLENE GLYCOL COD - 1.29 g OXYGEN/g ETHYLENE GLYCOL		

	 There is a large body of information confirming the biodegradability of ethylene glycol aerobic systems using activated sludge, sewage, and soil inocula. Degradation was essentially complete in <1-4 days although 100% theoretical biological oxygen demand may not be realized for several weeks (1-10). In a river die-away test, degradation was completed in 3 days at 20°C and 5-14 days at 8°C (11). Data are scant for anaerobic systems, but the evidence indicates that it readily biodegrades in these systems also (12). [(1) Bridie AL et al; Water Res 13: 627-30 (1979) (2) Conway RA et al; Environ Sci Technol 17: 107-12 (1983) (3) Haines JR, Alexander M: Appl Microbiol 29: 621-5 (1975) (4) Helfgott TB et al; An index of refractory organics USEPA 600/2-77-174 (1977) (5) Matsui S et al; Prog Water Technol 7: 645-59 (1975) (6) Means JL, Anderson SJ; Water Air Soil Poll 16: 301-15 (1981) (7) Pitter P; Water Res 10: 231-5 (1976) (8) Price KS et al; J Water Pollut Control Fed 46: 63-77 (1974) (9) Schefer W, Waelchli O; Z Wasser Abwasser Forsch 13: 205-9 (1980) (10) Zahn R, Wellens H; Z Wasser Abwasser Forsch 13: 1-7 (1980) (11) Evans WH, David
Water	EJ; Res 8: 97-100 (1974) (12) Dwyer DF, Tiedje JM; Appl Environ Microbiol 46: 185-90 (1983)]
ABIOTIC DEGRADATION:	Photo-oxidation in aqueous systems will not be significant (1,2). Glycols are known to be resistant to hydrolysis (3). Ethylene Glycol reacts with photochemically produced hydroxyl radicals with a rate constant of 7.7X10-2 m3/molecules/s (4). Assuming a hydroxyl radical concentration of 5X10+5/cu cm, the atmospheric half- life would be 50 hr. [(1) Dorfman LM, Adams GE; Reactivity of the hydroxyl radical in aqueous solutions 51 p NSRD-NBS-46 (1973) Hendry DG, Kenley RA; Atomospheric reaction products of organic compounds. 80 p USEPA 560/12-79-001 (1979) (3) Lyman WJ et al; Handbook of Property Estimation Methods. Environmental Behavior of Organic Compounds p. 7-1 to 7-48 NY: McGraw Hill (1982) (4) Atkinson R; Chem Rev 85: 69-201(1985)]
BIOCONCENTRATION:	The bioconcentration factor for ethylene glycol in fish (Golden ide) was reported to be 10 after 3 days of exposure(1). In algae (Chlorella fusca), the bioconcentration factor was 190 after 1 day (1). Its extremely low octanol/water partition coefficient ($\log = -1.36$ (2)) suggests that it will not bioconcentrate in fish. [(1) Freitag D et al; Chemosphere 14: 1589-616 (1985) (2) Hansch C, Leo AJ; Medchem Project Issue No 26. Claremont CA: Pomona College (1985)]
SOIL ADSORPTION/ MOBILITY:	No information concerning the adsorption of ethylene glycol could be found in the literature. Its low octanol/water partition coefficient (log P = -1.36 (1)) indicates that its adsorption to soil will be low (SRC). [(1) Hansch C, Leo AJ; Medchem Project Issue No. 19 Claremont, CA Pamona College (1981)
VOLATILIZATION:	The Henry's Law constant can be estimated to be 2.34X10-10 atm-m3/mole at 25°C (1). From this value of the Henry's Law constant, ethylene glycol will not evaporate from water. Due to its relatively low vapor pressure, it will not evaporate very rapidly from soil (SRC). [(1) Hine J Mookerjee PK; J Org Chem 40: 292-8 (1975) (2) Lyman WJ et al; Handbook of Chemical Estimation Methods NY: McGraw-Hill pp. 15-15 to 15-29 (1982)]

13. DISPOSAL CONSIDERATIONS

DO NOT discharge to sewer. Wear appropriate personal protection. Take up with sand, vermiculite, or similar inert material. Dispose in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION (for Bulk Shipment ONLY)

Proper Shipping Name:	Environmentally Hazardous Substance		
	Liquid NOS (Ethylene Glycol)		
Hazard Class:	9	ID No.:	UN3082
Label:	Miscellaneous RQ Product	Packaging Group:	III

Shipments with individual packages, i.e. drums, pails or gallons, containing less than RQ (5,000 pounds) not subjected to regulation.

15. REGULATORY INFORMATION

<i>United States -</i> TSCA - Inventory:	Listed	
Water Standards:	No data available	
Atmospheric Standards:	Clean Air Act (1990)) - List of Hazardous Air Contaminants: Listed
CERCLA:	Hazardous Substance	es (Reportable Quantities): $RQ = 5,000$ pounds
SARA Title III:	Section 311/312 - Cat	tegories: Acute; chronic
	Section/312 - Invento Tier II annual invento	ory Reporting: Ethylene Glycol is subject to Tier I and/or ory reporting.
	Section 313 - Emissic reporting requirement	on Reporting: Ethylene Glycol is not subject to Form R ts.
	Section 302 - Extreme	ely Hazardous Substances: Ethylene Glycol is not listed.
Other Regulations -		
<u>California</u> - Exposure Limits Director's List of Hat <u>Florida</u> Hazardous Substance <u>Massachusetts</u> Right-to-Know <u>Minnesota</u> Haz. Subs. List: <u>New Jersey</u> Right-to-Know I <u>Pennsylvania</u> Right-to-know <u>Michigan</u> Critical Materials I <u>Canada</u> WHMIS:	zardous Substances: es List: w List: List (Total): List:	vapor - 50 ppm ceiling; 125 mg/m3 ceiling listed listed listed listed (particulate and vapor) sn 0878 environmental hazard not listed 1% on Ingredient Disclosure List - item 716 (860)
Risk Phrases:		R: 22 S: 2

16. OTHER INFORMATION

For more information contact:

Thomas Cholke, Technical Services Manager 847-559-2000

Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this MSDS relates only to the specific material designated herein and does not relate to use in combination with any other materials or in any process.

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: EZ-MUD®

Revision Date:

02-Dec-2013

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: Synonyms: Chemical Family: Application:	EZ-MUD® None Blend Shale Inhibitor
Manufacturer/Supplier	Baroid Fluid Services Product Service Line of Halliburton P.O. Box 1675 Houston, TX 77251 Telephone: (281) 871-4000 Emergency Telephone: (281) 575-5000
Prepared By	Chemical Compliance Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Hydrotreated light petroleum	64742-47-8	10 - 30%	Not applicable	Not applicable
distillate				

3. HAZARDS IDENTIFICATION

Hazard OverviewMay cause eye, skin, and respiratory irritation. May cause headache, dizziness,
and other central nervous system effects. May be harmful if swallowed.

4. FIRST AID MEASURES

Inhalation	If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.
Skin	Wash with soap and water. Get medical attention if irritation persists. Remove contaminated shoes and discard.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Ingestion	Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.
Notes to Physician	Not Applicable

EZ-MUD® Page 1 of 6

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Flash Point/Range (C): Flash Point Method: Autoignition Temperature (F): Autoignition Temperature (C): Flammability Limits in Air - Low Flammability Limits in Air - Upp	er (%):	 > 200 Not Determined PMCC > 392 > 200 Not Determined Not Determined
Fire Extinguishing Media	Water fog, carbon dio	xide, foam, dry chemical.
Special Exposure Hazards	Decomposition in fire exposed surfaces.	may produce toxic gases. Use water spray to cool fire
Special Protective Equipment for Fire-Fighters	Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.	
NFPA Ratings: HMIS Ratings:	Health 2, Flammability 1, Reactivity 0 Health 2, Flammability 1, Physical Hazard 0 , PPE: B	

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures	Use appropriate protective equipment.
Environmental Precautionary Measures	Prevent from entering sewers, waterways, or low areas.
Procedure for Cleaning / Absorption	Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.
7. HANDLING AND STOR	AGE
Handling Precautions	Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.
Storage Information	Store away from oxidizers. Keep container closed when not in use.
8. EXPOSURE CONTROL	S/PERSONAL PROTECTION
Engineering Controls	A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.
Personal Protective Equipment	If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection	Organic vapor respirator with a dust/mist filter. (A2P2/P3) In high concentrations, supplied air respirator or a self-contained breathing apparatus.
Hand Protection	Impervious rubber gloves.

Skin ProtectionRubber apron.Eye ProtectionChemical goggles; also wear a face shield if splashing hazard exists.Other PrecautionsEyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Sympotoms related to exposure Acute Toxicity	
Inhalation	May cause mild respiratory irritation.
Eye Contact	May cause mild eye irritation.
Skin Contact	May cause mild skin irritation.

Ingestion	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cabotanooo				
Hydrotreated light	64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	5.2 mg/L (Rat) 4 h
petroleum distillate				

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

Ecotoxicity Product

Acute Fish Toxicity:	TLM96: >1000 mg/l (Pimephales promelas)
Acute Crustaceans Toxicity:	TLM48: 98 mg/l (Acartia tonsa)
Acute Algae Toxicity:	EC50: 16.70 mg/l (Skeletonema costatum)

Ecotoxicity Substance

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Hydrotreated light petroleum distillate	64742-47-8	EC50(72h): > 10,000 mg/L (Skeletonema costatum) (ISO 10253)	LC50 96h): > 10,000 mg/L (Scophthalmus maximus) (OSPARCOM 1995)		LC50(48h): > 10,000 mg/L (Acartia tonsa) (ISO 14669)

12.2 Persistence and degradability

No information available

12.3 Bioaccumulative potential

Substances	Log Pow
Hydrotreated light petroleum distillate	7.5

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

13. DISPOSAL	. CONSIDERATIONS
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Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT Not restricted

Canadian TDG Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Transportation Information

Labels:

None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.
Canadian Regulations	
Canadian DSL Inventory	All components listed on inventory or are exempt.
WHMIS Hazard Class	D2B Toxic Materials

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16. OTHER INFORMATION

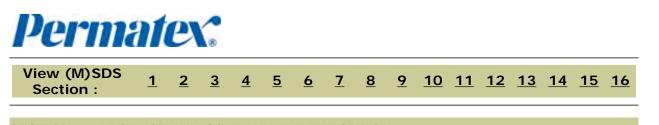
The following sections have been revised since the last issue of this SDS Not applicable

Additional Information	For additional information on the use of this product, contact your local Halliburton representative.
	For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.
Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

MSDS





NFPA

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name:	PERMATEX® FAST ORANGE® Hand Cleaner (Pumice Lotion) - 7.5 fl. oz. squeeze bottle		
Product Code:	25108		\sim
Stock No.:	25108		
Manufacturer Name:	Permatex, Inc.		
Address:	10 Columbus Blvd. Hartford, CT 06106 USA	\sim	
General Phone Number:	1-87-Permatex, (877) 376-2839	HMIS	
Emergency Phone Number:	800-255-3924	Health Hazard	1
CHEMTREC:	For emergencies in the US, call CHEMTREC: 800-424-9300	Fire Hazard	1
Canutec:	In Canada, call CANUTEC: (613) 996-6666 (call collect)	Reactivity	0
MSDS Creation Date: MSDS Revision Date:	August 30, 2010 September 28, 2010	Personal Protection	х
MSDS Format:	According to ANSI Z400.1-2004	* Chronic Heal Effects	lth

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Ingredient Percent
Non hazardous ingredient(s)	No data	60 - 100 by weight
d-Limonene	5989-27-5	<10 by weight
Ethoxylated C11-C16 Alcohol	127036-24-2	<3 by weight
Pumice	1332-09-8	<10 by weight
Crystalline silica	14808-60-7	0.1 - 1 by weight

SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview:	CAUTION! Irritant.
Route of Exposure:	Eyes. Skin. Inhalation. Ingestion.
Potential Health Effects:	
Eye:	May cause eye irritation.
Skin:	May cause skin irritation.
Inhalation:	Prolonged or excessive inhalation may cause respiratory tract irritation.

Ingestion:

SECTION 4 - FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 to 20 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers. Get immediate medical attention.
Skin Contact:	Immediately wash skin with plenty of soap and water for 15 to 20 minutes, while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.
Ingestion:	If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point:	Not determined.
Flash Point Method:	Not determined.
Auto Ignition Temperature:	Not determined.
Lower Flammable/Explosive Limit:	Not determined.
Upper Flammable/Explosive Limit:	Not determined.
Fire Fighting Instructions:	Evacuate area of unprotected personnel. Use cold water spray to cool fire exposed containers to minimize risk of rupture. Do not enter confined fire space without full protective gear. If possible, contain fire run-off water.
Extinguishing Media:	Use carbon dioxide (CO2) or dry chemical when fighting fires involving this material.
Protective Equipment:	As in any fire, wear Self-Contained Breathing Apparatus (SCBA), MSHA/ NIOSH (approved or equivalent) and full protective gear.
Unusual Fire Hazards:	None.
Hazardous Combustion Byproducts:	Oxides of carbon and other unknown organic compounds. Irritating fumes and gases may be released upon thermal processing or during combustion.
NFPA Ratings:	
NFPA Health:	1
NFPA Flammability:	1
NFPA Reactivity:	0
NFPA Other:	

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personnel Precautions:	Evacuate area and keep unnecessary and unprotected personnel from entering the spill area.
Environmental Precautions:	Avoid runoff into storm sewers, ditches, and waterways.
Spill Cleanup Measures:	Absorb spill with inert material (e,g., dry sand or earth), then place in a chemical waste container. Provide ventilation. Clean up spills immediately observing precautions in the protective equipment section. After removal, flush spill area with soap and water to remove trace residue. Avoid personal contact and breathing vapors or mists. Ventilate area. Use proper personal protective equipment as listed in section 8.
Methods for containment:	Wipe or scrape up spill material. Maintain good ventilation for large spills. Place scrap material in a well-ventilated area and allow to cure to rubber. Clean up spills thoroughly as residue is slippery.
Methods for cleanup:	Wipe or scrape up spill material. Maintain good ventilation for large spills. Place scrap material in a well-ventilated area and allow to cure to rubber. Clean up spills thoroughly as residue is slippery.
Other Precautions:	Pump or shovel to storage/salvage vessels. Add inhibitor to prevent polymerization.

SECTION 7 - HANDLING and STORAGE

Handling:	Use with adequate ventilation. Avoid breathing vapor, aerosol or mist.
Storage:	Store in a cool, dry, well ventilated area away from sources of heat and incompatible materials. Keep container tightly closed when not in use.
Special Handling Procedures:	Provide appropriate ventilation/respiratory protection against decomposition products (see Section 10) during welding/flame cutting operations and to protect against dust during sanding/grinding of cured product.
Hygiene Practices:	Wash thoroughly after handling.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION - EXPOSURE GUIDELINES

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Eye/Face Protection:	Wear appropriate protective glasses or splash goggles as described by 29 CFR 1910.133, OSHA eye and face protection regulation, or the European standard EN 166.
Skin Protection Description:	Wear appropriate protective gloves and other protective apparel to prevent skin contact. Consult manufacturer's data for permeability data.
Respiratory Protection:	A NIOSH approved air-purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.
Other Protective:	Facilities storing or utilizing this material should be equipped with an eyewash and a deluge shower safety station.

EXPOSURE GUIDELINES

Crystalline silica :

Guideline ACGIH:

Guideline OSHA:

Notes :

0.025 mg/m3 TLV-TWA: 0.025 mg/m3 Respirable fraction (R) [10 mg/m3]/[{% SiO2} + 2] Only established PEL and TLV values for the ingredients are listed.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

Physical State Appearance:	White viscous lotion
Color:	White
Odor:	Orange
Boiling Point:	>390°F (>200°C)
Melting Point:	Not determined.
Specific Gravity:	0.97
Solubility:	Soluble
Vapor Density:	>1 (air=1)
Vapor Pressure:	Not determined.
Evaporation Rate:	Not determined.
pH:	6 - 8
Molecular Formula:	Mixture
Molecular Weight:	Mixture
Flash Point:	Not determined.
Flash Point Method:	Not determined.
Auto Ignition Temperature:	Not determined.
VOC Content:	8%, 78.97 g/l

SECTION 10 - STABILITY and REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	Exposure to moisture
Incompatible Materials:	Strong oxidizers, Acids

SECTION 11 - TOXICOLOGICAL INFORMATION

Non hazardous ingredient(s):	
RTECS Number:	VV7565000
<u>d-Limonene</u> :	
RTECS Number:	GW6360000

MSDS

Skin:	Administration onto the skin - : >5 gm/kg [Details of toxic effects not reported other than lethal dose value] Administration onto the skin - Rabbit : >5000 mg/kg [Details of toxic effects not reported other than lethal dose value] Administration onto the skin - Rabbit : 10 %/24H Administration onto the skin - Rat : 100 %/1H
Ingestion:	Oral - Rat LD50: 4400 mg/kg [Behavioral - Changes in motor activity (specific assay) Lungs, Thorax, or Respiration - Respiratory depression Skin and Appendages - Hair] Oral - Mouse LD50: 5600 mg/kg [Behavioral - Changes in motor activity (specific assay) Lungs, Thorax, or Respiration - Respiratory depression Skin and Appendages - Hair]
Crystalline silica :	
RTECS Number:	VV7330000
Carcinogenicity:	IARC: Group 1: Carcinogenic to humans. NTP: Reasonably anticipated to be a human carcinogen.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	No ecotoxicity data was found for the product.
Environmental Fate:	No environmental information found for this product.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal: Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines.

RCRA Number: Not determined.

SECTION 14 - TRANSPORT INFORMATION

DOT Shipping Name:	Not Regulated.
DOT UN Number:	Not applicable.
DOT Hazard Class:	Not applicable.
DOT Packing Group:	Not applicable.

SECTION 15 - REGULATORY INFORMATION

Non hazardous ingredient(s) :

TSCA Inventory Status:	Listed
Massachussetts:	Listed
Pennsylvania:	Listed
Canada DSL:	Listed
d-Limonene_:	

TSCA Inventory Status:	Listed
Canada DSL:	Listed
Ethoxylated C11-C16 Alcohol	:
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Pumice :	
TSCA Inventory Status:	Listed
EINECS Number:	603-719-3
Canada DSL:	Listed
Crystalline silica :	
TSCA Inventory Status:	Listed
Massachussetts:	Listed
Pennsylvania:	Listed
Canada DSL:	Listed
Canadian Regulations.	WHMIS Hazard Class(es): D2B All components of this product are on the Canadian Domestic Substances List.

SECTION 16 - ADDITIONAL INFORMATION

HMIS Health Hazard:	1
HMIS Fire Hazard:	1
HMIS Reactivity:	0
HMIS Personal Protection:	X
MSDS Creation Date:	August 30, 2010
MSDS Revision Date:	September 28, 2010
MSDS Author:	Actio Corporation
Disclaimer:	This Health and Safety Information is correct to the best of our knowledge and belief at the date of its publication but we cannot accept liability for any loss, injury or damage which may result from its use. The information given in the Data Sheet is designed only as a guidance for safe handling, storage and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment.

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FLEETGUARD DEF ADBLUE DIESEL EXHAUST FLUID 825240

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

825240

AshlandRegulatory Information Number1-800-325-3751P.O. Box 2219Telephone614-790-3333Columbus, OH 43216Emergency telephone number1-800-ASHLAND (1-800-274-
5263)

Product name

FLEETGUARD DEF ADBLUE DIESEL EXHAUST FLUID

Product code

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, liquid, colourless

NOTICE: WHILE THIS MATERIAL HAS A LOW LEVEL OF TOXICITY, GOOD INDUSTRIAL HYGIENE PRACTICES ARE ENCOURAGED TO MINIMIZE EXPOSURE.

Potential Health Effects

Exposure routes

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

Eye contact

May cause mild eye irritation. Symptoms include stinging, tearing, and redness.

Skin contact

May cause slight skin irritation.

Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

Inhalation

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Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material:, lung (for example, asthma-like conditions)

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), Headache, Dizziness

Target Organs

No data

Carcinogenicity

This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Reproductive hazard

Based on the available information, risk to the fetus from maternal exposure to this material cannot be assessed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components	CAS-No. / Trade Secret No.	Concentration
UREA	57-13-6	>=30-<40%

4. FIRST AID MEASURES

Eyes

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If symptoms develop, move individual away from exposure and into fresh air. Flush eyes gently with water while holding eyelids apart. If symptoms persist or there is any visual difficulty, seek medical attention.

Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Notes to physician

Hazards: No information available. **Treatment:** No information available.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Dry chemical, Carbon dioxide (CO2), Water spray

Hazardous combustion products

acid vapors, Ammonia, carbon dioxide and carbon monoxide, nitrogen oxides (NOx)

Precautions for fire-fighting

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

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Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

Methods for cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Other information

Comply with all applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage

Store in a cool, dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

UREA		57-13-6	
WEEL	time weighted average	10 mg/m3	Total particulate.

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect



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exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye protection

Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection

Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use. Wear resistant gloves (consult your safety equipment supplier).

Respiratory protection

Respiratory protection is not required under normal conditions of use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Form	liquid
Colour	colourless
Odour	ammoniacal
pH	10
Flash point	
	not applicable
Vapour pressure	293.309 hPa
Density	1.09 g/cm3 @ 68 °F / 20 °C
	9.09 lb/gal @ 68 °F / 20 °C
Water solubility	soluble

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10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid excessive heat

Incompatible products

Acids, Chlorine, nitrates, strong bases, Strong oxidizing agents

Hazardous decomposition products

acid vapors, Ammonia, carbon dioxide and carbon monoxide, nitrogen oxides (NOx)

Hazardous reactions

Product will not undergo hazardous polymerization.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	
Acute oral toxicity -	: no data available
Product	

Acute inhalation toxicity

Acute inhalation toxicity - : no data available Product

Acute dermal toxicity

Acute dermal toxicity -	: no data available	
Product		

Acute toxicity (other routes of administration)

Acute toxicity (other	: no data available	
routes of administration)		

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12. ECOLOGICAL INFORMATION

Biodegradability

Biodegradability - Product : Remarks: Expected to be ultimately biodegradable

Bioaccumulation

Bioaccumulation - Product	: no data available	
---------------------------	---------------------	--

Bioaccumulation - Components

UREA	: Species: Green algae (Chlorella fusca vacuolata) Exposure
	time: 24 h Concentration: 0.05 mg/l Bioconcentration
	factor (BCF): 11,700 Method: Static

Ecotoxicity effects

Toxicity to fish

e/	
Toxicity to fish - Product	: LC 50: 9,100 mg/l
	Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates

Toxicity to daphnia and	: EC 50: 10,000 mg/l
other aquatic invertebrates	Exposure time: 24 h
- Product	Species: Water flea (Daphnia magna)

Toxicity to algae

Toxicity to algae -	: no data available	
Product		

Toxicity to bacteria

Toxicity to bacteria -	: no data available	
Product		



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13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.	
U.S. DOT - ROAD						
	Not dangerous goods					

U.S. DOT - RAIL

Not dangerous goods

U.S. DOT - INLAND WATERWAYS

Not dangerous goods

TRANSPORT CANADA - ROAD

Not dangerous goods

TRANSPORT CANADA - RAIL

Not dangerous goods

TRANSPORT CANADA - INLAND WATERWAYS

Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

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Not dangerous goods

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

California Prop. 65

This product does not contain any chemicals known to State of	
California to cause cancer, birth defects, or any other reproductive	
harm.	

SARA Hazard Classification SARA 311/312 Classification

SARA 311/312 Classifie

No SARA Hazards

New Jersey RTK Label Information

WATER	7732-18-5
UREA	57-13-6

Pennsylvania RTK Label Information

WATER	7732-18-5
UREA	57-13-6

Notification status

US. Toxic Substances Control Act	y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA).	y (positive listing)
Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	
Australia. Industrial Chemical (Notification and Assessment)	y (positive listing)
Act	
New Zealand. Inventory of Chemicals (NZIoC), as published	y (positive listing)
by ERMA New Zealand	

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Japan. Kashin-Hou Law List	y (positive listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear	y (positive listing)
Waste Control Act	
China. Inventory of Existing Chemical Substances	y (positive listing)

Reportable quantity - Product

US.	EPA CERCLA	Hazardous Substances (40 CFR 302)	500000 lbs

Reportable quantity-Components

AMMONIUN	M HYDROX	KIDE ((NH4)(OH))	1336-21-6	1000 lbs

	HMIS	NFPA
Health	1	1
Flammability	0	0
Physical hazards	0	
Instability		0
Specific Hazard		

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

Permatex, Inc. 10 Columbus Blvd. Hartford, CT 06106 USA Telephone: 1-87-Permatex (877) 376-2839 Emergency: 800-255-3924 (ChemTel) International Emergency: +01-813-248-0585

Material Safety Data Sheet

1. PRODUCT IDENTIFICATION		
Product Name:	1C FORM-A-GASKET #1 SEALANT 110Z	
Item No:	80003	
Product Type:	Sealant	

2. COMPOSITION/INFORMATION ON INGREDIENTS					
Component	Weight%	ACGIH; TLV-TWA	OSHA PEL		
KAOLIN 1332-58-7	40-60	2 mg/m ³	15 mg/m ³		
ROSIN 8050-09-7	20-30	Not listed	Not listed		
ETHANOL 64-17-5	10-30	1000 ppm	1000 ppm; 1900 mg/m ³		
VEGETABLE OIL 68187-84-8	<5	5 mg/m ³	Not listed		
2-PROPANOL 67-63-0	<2	200 ppm	400 ppm; 980 mg/m ³		
TITANIUM DIOXIDE 13463-67-7	0.1-1.0	10 mg/m ³	15 mg/m ³		
CRYSTALLINE SILICA 14808-60-7	0.1-1.0	0.025 mg/m ³	Not listed		
METHANOL 67-56-1	0.1-1.0	200 ppm	200 ppm; 260 mg/m ³		

3. HAZARDS IDENTIFICATION

Toxicity:

May cause eye, skin and respiratory irritation. This product contains encapsulated silicon dioxide (quartz silica). No exposure to free respirable silica is anticipated during normal use of this product. Silica may be released by grinding or machining of coated material. Use NIOSH-approved dust/mist respirator when grinding or machining.

Primary Routes of Entry: Signs and Symptoms of Exposure: Eye and skin contact, ingestion, inhalation Excessive accidental exposure may cause headache, dizziness, nausea and mild respiratory irritation. Overexposure may cause eye and skin redness.

Component	Weight%	NTP	ACGIH Carcinogens	IARC
KAOLIN	40-60		A4-Not classifiable as	
1332-58-7			a human carcinogen	
ETHANOL	10-30		A4 - Not Classifiable	
64-17-5			as a Human	
			Carcinogen	
2-PROPANOL	<2		A4 - Not classifiable	Group 3 Monograph 71, 1999;
67-63-0			as a human	Supp.7, 1987; Monograph 15,
			carcinogen	1977
TITANIUM DIOXIDE	0.1-1.0	male rat-negative,	A4	Group 2B; Vol 93,2006; Vol
13463-67-7		female rat-negative,		47,1989
		male mice-negative,		
		female mice-negative		
CRYSTALLINE SILICA	0.1-1.0		A2 - Suspected	Group 1 Monograph 68, 1997
14808-60-7			Human Carcinogen	(inhalation of quartz)

Medical Conditions Recognized as P Being Aggravated by Exposure:

Preexisting eye, skin and respiratory disorders may be aggravated by overexposure to this product.

4. FIRST AID MEASURES

Ingestion:

Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

4. FIRST AID MEASURES			
Inhalation:	Move to fresh air in case of accidental inhalation of vapours. Get medical attention/advice if you feel unwell. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.		
Skin Contact:			
Eye Contact:			
5. FIRE FIGHTING MEASU	RES		
Flash Point °F(C°):	Does not apply. Per ASTM D4359 this product is a solid.		
Recommended Extinguishing Media	Carbon Dioxide, Dry Chemicals, Foam.		
Special Fire-Fighting Procedures:	Firefighters should wear self-contained breathing apparatus. Water spray may be ineffective on flames but should be used to keep fire-exposed containers cool.		
Hazardous Products of Combustion:	Aldehydes, Oxides of carbon, Carboxylic acids		
Unusual Fire/Explosion Hazards:	Closed containers may rupture or explode when exposed to extreme heat		
Lower Explosive Limit:	Not determined		
Upper Explosive Limit:	Not determined		
6. ACCIDENTAL RELEASE	MEASURES		
	Eliminate all sources of invition. Maintain more locatilation. Take up with an input showhart. Otags in a		

Spill Procedures:

Eliminate all sources of ignition. Maintain good ventilation. Take up with an inert absorbent. Store in a closed waste container until disposal. Residues may be cleaned up with isopropyl alcohol.

7. HANDLING AND STORAGE

Storage: Handling: Store away from heat.

Avoid contact with skin and eyes. Do not inhale vapors. Wash thoroughly after handling. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eyes:	Safety glasses.
Skin:	Neoprene or nitrile gloves recommended.
Ventilation:	General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits (or to the lowest feasible levels when limits have not been established) during the use of this product.
Respiratory Protection:	An approved organic vapor respirator should be worn when exposures are expected to exceed the applicable limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Reddish brown paste
Odor:	Alcoholic
Boiling Point:	>180°F
pH:	Does not apply
Solubility in Water:	Partial
Specific Gravity:	1.4-1.5
VOC(Wt.%):	13.5%
Vapor Pressure:	33 mmHg @ 68°F
Vapor Density (Air=1):	2.07
Evaporation Rate:	7.7 (ether = 1)

10. STABILITY AND REACTIVITY

Chemical Stability: Hazardous Polymerization: Incompatabilities: Conditions to Avoid: Hazardous Products of Combustion: Stable at normal conditions Will not occur Strong oxidizers Keep away from heat, sparks and open flame. Aldehydes, Oxides of carbon, Carboxylic acids

11. TOXICOLOGICAL INFORMATION

See Section 3

12. ECOLOGICAL INFORMATION

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Recommended Method of Disposal: Disposal should be made in accordance with federal, state and local regulations... **US EPA Waste Number:** NH - Not a RCRA Hazardous Waste Material

14. TRANSPORTATION INFORMATION (40CED 470)

DOT	(49CFR 172)	
Grou	nd Transport (DOT)	
	DOT Shipping Name:	Not regulated
	Hazard Class:	None
	UN/ID Number:	None
ΙΑΤΑ		
	Proper Shipping Name:	Not regulated
	Class or Division:	None
	UN/ID Number:	None
IMDO	6	
	Proper Shipping:	Not regulated
	Hazard Class:	None

Proper Shipping:	Not regu		
Hazard Class:	None		
UN Number:	None		
Marine Pollutant:	None		

Marine Pollutant:

15. REGULATORY INFORMATION

SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.

NONE

California Proposition 65: No California Prop 65 chemicals are known to be present.

TSCA Inventory Status: All components of this product are listed (or exempt) on the EPA TSCA inventory.

16. OTHER INFORMATION

Estimated NFPA Rating: HEALTH 2, FLAMMABILITY 1, REACTIVITY 0. Estimated HMIS Classification: HEALTH 2, FLAMMABILITY 1, PHYSICAL HAZARD 0 NFPA is a registered trademark of the National Fire Protection Assn. HMIS is a registered trademark of the National Paint and Coatings Assn.

Prepared By:	Denise Boyd, Manager-Environmental, Health & Safety	Revision Date: June 09, 2010
Company:	Permatex. Inc. 10 Columbus Blvd. Hartford, CT USA 06106	Revision ³ Number:
Talambana Na .	1.97 Dermeter (977) 276 2920	Humber.

Telephone No.: 1-87-Permatex (877) 376-2839 10428 - FSF INJECT ALL

MATERIAL SAFETY DATA SHEET FSF INJECT ALL

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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TRADE NAME:

FSF INJECT ALL

APPLICATIONS:

EMERGENCY TELEPHONE:

SUPPLIER:

TELEPHONE: FAX:

CONTACT PERSON:

Lost circulation material.

281-561-1600

Supplied by a Business Unit of M-J L.L.C. P.O. Box 42842, Houston, Texas 77242-2842 See cover sheet for local supplier. 281-561-1509 281-561-7240

Sam Hoskin - Manager, Occupational Health

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME: Silicic acid, sodium salt, aqueous -		CAS No.: 1344-09-8	CONTENTS : 100 %	EPA RQ:	TPQ:	
solution	4					

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

WARNING! CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION. Avoid contact with eyes and skin and clothing. Avoid breathing airborne product. Do not take internally. Wash thoroughly after handling.

This product is a/an Clear, colorless liquid Dike and contain spills. Keep out of sewers and waterways.

ACUTE EFFECTS:

HEALTH HAZARDS, GENERAL:

Dries to form glass film which can easily cut skin. Can etch glass if not promptly removed.

INHALATION: Initating to the respiratory tract if inhaled.

INGESTION: May cause gastric distrass, maisca and vomiting if ingested.

SKIN: Irritating to the skin.

EYES: Initiating to the cycs.

CHRONIC EFFECTS: CARCINOGENICITY:

IARC: Not listed, OSHA: Not regulated, NTP Not issued.

ROUTE OF ENTRY:

Inhalation, Skin and/or eye contact.

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Work Area Controlled Copy

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TARGET ORGANS:

Respiratory system, lungs. Skin. Eyes.

4. FIRST AID MEASURES

GENERAL:	Persons seeking medical attention should carry a copy of this MSDS with them.
INHALATION:	Move the exposed person to firsh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.
INGESTION:	Drink a couple of glasses water or milk. Do NOT induce vomiting unless directed to do so by a physician. Never give anything hy mouth to an unconscious person Get medical attention.
SKIN:	Wash skin thoroughly with scap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.
EYES:	Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues

5. FIRE FIGHTING MEASURES

AUTO IGNITION TEMP. ('F):	NAD
FLAMMABILITY LIMIT - LOWER(%):	N/D
FLAMMABILITY LIMIT - UPPER(%):	N/D

EXTINGUISHING MEDIA:

Carbon dioxide (CO2). Dry chemicals. Foam. Water spray, fog or mist.

SPECIAL FIRE FIGHTING PROCEDURES:

Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (including fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

UNUSUAL FIRE & EXPLOSION HAZARDS:

No unusual fire or explosion hazards noted

HAZARDOUS COMBUSTION PRODUCTS:

Irritating gases/vapora/fumes. Oxides of: Carbon.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Wear proper personal protective equipment (see MSDS Section 8).

SPILL CLEAN-UP PROCEDURES:

Absorb in vermiculite, dry sand or earth and place into containers. Rinse area with water. Dike far ahead of larger spills for later disposal. Do not contaminate draining or waterways.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS:

Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed.

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STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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INGREDIENT NAME: CAS No.: Silicic acid, sodium salt, aqueous - 1344-09-8 solution		OSHA PEL: TWA: STEL:	ACGIH TLV: TWA: SIEL:	OTHER: TWA: STEL: C 5	UNITS: mg/m3	
INGREDIENT CO	MMENTS: Exposure limit recommen	ided by manufacture	C=Ceiling Limit			
PROTECTIVE EQ	UIPMENT:	•	0 ()	
ENGINEERING C	ONTROLS: Use appropriate engineers keep worker exposure bel	ing controls such as, low the applicable lin	exhaust ventilation : hits.	and process enclosu	re, to reduce air con	tunination and
VENTILATION:	Supply natural or mechan limits.	nical ventilation adeq	uate to exhaust airbo	ome product and ke	ep exposures below	the applicable
RESPIRATORS:	If exposed to particulates/ Use at least a NIOSH-app containing oil mist/aeroso If exposed to organic vap Use a NIOSH/MSHA-app	oroved N95 haif-mas of use at least a NIOS fors:	H-approved P95 ha	lf-mask disposable o	r reuseable particel	vironments ate respirator.
PROTECTIVE GL	OVES: Chemical resistant gloves material. Such as, Neopre	s required for prolon me, nitrile, polyethy	ged or repeated cont	act. Use protective g	floves made of: Imp	ermeable
EVE PROTECTIC	N: Wear chemical safety go	ggles where eye expe	osure is reasonably p	robable.		
PROTECTIVE CL	OTHING: Wear appropriate clothin	g to prevent repeated	f ar prolonged skin (contact.		
HYGIENIC WORI	C PRACTICES: Wash promptly with soap of contamination.	p and water if skin be	icomes contaminated	i. Change work clot	hing daily if there is	s any possibility
9. PHYSICAL	AND CHEMICAL I	PROPERTIES				-
COLOR: ODOR: SOLUBILITY DE	FIC GRAVITY (g/ml):	Liquid. Colorless. Odorless et no ci Soluble in water. 1,3-1.5 10.8-12.5 lb/gal N/D		fURE (°F); 68		



VAPOR DENSITY (air=1): pH-VALUE, DILUTED SOLUTION:

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CONCENTRATION (%,M): 1%

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N/D 11.0-12.5

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10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID: Flammable hydrogen gas may be produced on prolonged contact with metals such as aluminum, un, lead, and zinc.

HAZARDOUS POLYMERIZATION: Will not polymerize.

POLYMERIZATION DESCRIPTION: Not relevant.

MATERIALS TO AVOID: Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS: No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: No toxicological data is available for this product.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:

Contact M-I Environmental Affairs for ecological information.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT:

This product does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc, may render the resulting materials hazardous.

Empty containers retain residues. All labeled precautions must be observed.

DISPOSAL METHODS:

Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

PRODUCT RQ:

N/A

U.S. DOT: U.S. DOT CLASS:

Not regulated.

CANADIAN TRANSPORT:

: 7

TDGR CLASS:	Not regulated.					
SEA TRANSPORT: IMDG CLASS:	Not regulated.				Ŷ	
AIR TRANSPORT: ICAO CLASS:	Not regulated.	-				
15. REGULATORY INFORMAT	TION	u.			······································	
REGULATORY STATUS OF INGRED	ENTS:	1				
NAME: Silicic acid, sodium salt, aqueous - solution	CAS No: 1344-09-8	TSCA: Yes	CERCLA: No	SARA 302: No	SARA 313: No	DSL(CAN): Yes
US FEDERAL REGULATIONS: WASTE CLASSIFICATION:	Not a hazardou:	s waste by 1	J.S. RCRA c	riteria. See Sec	tion 13.	
REGULATORY STATUS:	This Product or be all inclusive	its compor - selected re	ents, if a mix gulations rep	ture, is subject presented):	to following rej	gulations (Not meant t
	SECTION 313: requirements of Act of 1986 and	Section 31	3 of Title III	ontain toxic ch of the Superfu	emical subject t nd Amendment	o the reporting and Reauthorization
	SARA 311 Cat 1: Immediate (/	egories: Acute) Heal	th Effects.			
	The component chemical registr TSCA (U.S.)	s of this pr ies:	oduct are lista	ed on or are exe	ampt from the fo	ollowing international
STATE REGULATIONS: STATE REGULATORY STATUS:	This product or be all inclusive None.	it's compor - selected r	ients, if a mix egulations rep	tture, is subject presented):.	to following re	gulations (Not means t
	PROPOSITION California's Sat reproductive to	e Drinking	Water and T	oxic Enforcem	ent Act of 1986	ed by the State of as causing cancer or
CANADIAN REGULATIONS: REGULATORY STATUS:	This Material S Regulations.	afety Data	Sheet has bee	en prepared in o	compilance with	the Controled Produc
	Canadian WHN	AS Classit	ication: Not a	Controlled Pre	oduci.	
16. OTHER INFORMATION						
			1- 1- P			

REACTIVITY: 0 Minimal Hazard NPCA HMIS PERS. PROTECT. INDEX: J - Splash Goggles, Gloves, Synthetic Apron, Dust and Vapor Respirator.

USER NOTES:

N/A = Not applicable N/D = Not determined

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INFORMATION SOURCES:	OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants. ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition). Sax's Daugerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997). Product information provided by the commercial vendor(s).
PREPARED BY:	Sam Hoskin/hb
REVISION No./Repl. MSDS of:	1/September 10, 1996
MSDS STATUS:	Approved.
DATE: January 11, 1999	

DISCLAIMER:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to center or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or simutions. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user, however, no warranty, either expressed or implied, for itability of any nature with respect to this product or to the data herein is made or incurred hereunder. herein is made or incurred hereunder.





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FAX NO. :323 2707

10197 - FSF POLYSWELL

MATERIAL SAFETY DATA SHEET FSF POLYSWELL

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME:	FSF POLYSWELL
CHEMICAL CLASS:	Acrylamide polyater or copolymer
APPLICATIONS:	Oil well drilling fluid additive.
EMERGENCY TELEPHONE:	281-561-1600
SUPPLIER:	Supplied by a Business Unit of M-1 L.L.C. P.O. Box 42842, Houston, Texas 77242-2842 See cover sheet for local supplier.
TELEPHONE:	281-561-1509 281-561-7240
CONTACT PERSON:	Sam Hoskin - Manager, Occupational Health

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME: Proprietary ingredients	CAS No .:	CONTENTS:	EPA RQ:	TPQ;
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3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION! MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. Avoid contact with eyes, skin and clothing. Avoid broathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

This product is a/an white powder. May form explosive dust-air mixnares. Slippery when wer, A nuisance dust.

ACUTE EFFECTS:

HEALTH HAZARDS, GENERAL:

Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may read to pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma. Dermatitis and asthma may result from short contact periods.

INHALATION: May be irritating to the respiratory tract if inhaled.

INGESTIOM: May cause gastric distress, nausca and vomiting if ingested.

SKIN: May be irritating to the skin.

EYES: May be irritating to the syes.

CHRONIC EFFECTS: CARCINOGENICITY:

IARC: Not listed, OSHA: Not regulated, NTP: Not listed.

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10197 - FSF POLYSWELL

HANDLING PRECAUTIONS:

Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation, Mechanical ventilation or local exhaust ventilation is required.

STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

and a state of the		OSHA	PEL:	ACGIH	TLV:	OTHER	:5	
INGREDIENT NAME: Proprietary ingredients	GAS No.:	TWA: 5	STEL:	TWA: 3	STEL;	TWA:	STEL:	UNITS: mg/m3 resp.dust

INGREDIENT COMMENTS:

Exposure limits for Particulates Not Otherwise Classified (PNOC) apply to dust/mist/aerosol of the proprietary ingredients this product.

PROTECTIVE EQUIPMENT:



ENGINEERING CONTROLS:

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

- VENTILATION: Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.
- RESPIRATORS: Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

PROTECTIVE GLOVES:

Use suitable protective gloves if risk of skin contact.

EVE PROTECTION:

Wear dust resistant safety gaggles where there is danger of eye contact.

PROTECTIVE CLOTHING:

Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES:

Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: COLOR: ODOR: SOLUBILITY DESCRIPTION: DENSITY/SPECIFIC GRAVITY (g/mi): VAPOR DENSITY (air=1): VAPOR PRESSURE: Powder, dust. White. Odorless or no characteristic odor. Swells on contact with water. 0.8 = 1.0 TEMPERATURE (°F): 68 N/A TEMPERATURE (°F):

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FAX NO. :323 2707

10197 - FSF POLYSWELL

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID: N/D.

HAZARDOUS POLYMERIZATION: Will not polymerize.

POLYMERIZATION DESCRIPTION: Not relevant.

MATERIALS TO AVOID: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: No taxicological data is available for this product.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:

Contact M-I Environmental Affairs for ecological information.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT;

This product does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous.

Empty containers retain residues. All labeled precautions must be observed.

DISPOSAL METHODS:

Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

PRODUCT RQ:

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NIA

U.S. DOT: U.S. DOT CLASS:

Not regulated.

CANADIAN TRANSPORT:

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FAX NO. :323 2707

TDGR CLASS:	Not regulated.							
SEA TRANSPORT: IMDG CLASS:	Not regulated.							
AIR TRANSPORT: ICAO CLASS:	Not regulated.							
15. REGULATORY INFORMA	TION							
REGULATORY STATUS OF INGRED								
NAME: Proprietary ingredients	CAS No:	TSCA: Yes	CERCLA: No	SARA 302: Ne	SARA 313: No	DSL(CAN); Yes		
US FEDERAL REGULATIONS: WASTE CLASSIFICATION:	Not a hazardous	s waste by I	U.S. RCRA e	riteria. See Sec	tion 13.			
REGULATORY STATUS:	This Product or its components, if a mixture, is subject to following regulations (Not meant t be all inclusive - selected regulations represented):							
	SECTION 313: requirements of Act of 1986 and	Section 31	3 of Title III	ontain toxic chi of the Superful	emical subject t nd Amendment	o the reporting and Reputhorization		
	SARA 311 Cate 1: Immediate (A		th Effects.					
	The component chemical registr TSCA (U.S.)		oduct are liste	ed on or are exc	mpt from the fe	llowing international		
STATE REGULATIONS:								
STATE REGULATORY STATUS:	This product or be all inclusive - None.				to following rea	gulations (Not meant to		
	PROPOSITION California's Safe reproductive tox	Drinking	Water and To	xic Enforceme	nt Act of 1986	ed by the State of as causing cancer or		
CANADIAN REGULATIONS:	This Material Se	web Data S	theat inc has	n wannal in c	uppilosoa u itk	the Controled Product		
CODERIORI STATUS.	Regulations.	nety isatu .	meet mig tiee	n propared in e	andamarce with	are controled riotides		
	Canadian WHM	IIS Classific	cation: Not a	Controlled Pro	duct.			
16. OTHER INFORMATION	na an an Andria an South Character							

NPCA HMIS HAZARD INDEX: FLAMMABILITY: REACTIVITY: NPCA HMIS PERS. PROTECT. INDEX: 0 Minimal Hazard 1 Slight Hazard 0 Minimal Hazard E - Safety Glasses, Gloves, Dust Respirator

USER NOTES:

N/A = Not applicable N/D = Not determined

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10197 - FSF POLYSWELL	
INFORMATION SOURCES:	OSHA Permissible Exposure Limits, 29 CPR 1910, Subpart Z, Section 1910.1000, Air Contaminants. ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition). Sac's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VMR, New York, New York, (1997). Product Information provided by the commercial vendor(s).
PREPARED BY:	Sam Hoskin/bb
REVISION No.:	0
MSDS STATUS:	Approvod.
DATE:	April 9, 1999

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DISCLAIMER: MSDS funished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot enticipate or control the conditions under which this information and product may be used we make no guarantee that the precautions we have suggested will be adequate for all individuals as/or situations. It is the abligation of each user of this product to comply with the requirements of all applicable have reguling use and disposal of this product. Additional information, while be intrinshed upon request to assist the user; however, no warranty, either expressed or implied, nor highlity of any nature with respect to this product or to the data herein is made or incurred hereunder.

PETRO CANADA

GASOLINE - ETHANOL

1. Product and company identification

Product name	: GASOLINE - ETHANOL
Synonym	: SuperClean, SuperClean 94 (Montreal), GASOHOL, Regular, Mid-Grade, Plus, WinterGas, RegularClean, PlusClean, marked or dyed gasoline, Super Premium (94 RO), E-10, Ultra 94, Ethanol blended gasoline
Code	: GASOHOL
Material uses	 Gasoline-Ethanol is used in spark ignition engines including motor vehicles, farm vehicles, inboard and outboard boat engines, small engines and recreational vehicles.
Manufacturer	: PETRO-CANADA P.O. Box 2844 150 – 6th Avenue South-West Calgary, Alberta T2P 3E3
In case of emergency	: Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

2. Hazards identification

Physical state	1	Clear liquid.
Odour	:	Gasoline
WHMIS (Canada)	:	
		Class B-2: Flammable liquid Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).
OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	:	WARNING!
		FLAMMABLE LIQUID AND VAPOUR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. CONTAINS MATERIAL WHICH MAY CAUSE HERITABLE GENETIC EFFECTS.
		Flammable liquid. Irritating to eyes, respiratory system and skin. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapour or mist. Avoid contact with eyes, skin and clothing. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure. Contains material which may cause heritable genetic effects. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	:	Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects		
Inhalation	:	Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.
Ingestion	:	Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract. Ingestion of this product may cause Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.
Skin	:	Irritating to skin.

2. Hazards identification

Potential chronic health effects

Chronic effects	: This product contains an ingredient or ingredients, which have been shown to cause chronic toxic effects. Repeated or prolonged exposure to the substance can produce blood disorders.
Carcinogenicity	: Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	: Contains material which may cause heritable genetic effects.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Medical conditions aggravated by over- exposure	: Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated skin exposure can produce local skin destruction or dermatitis.
Can taxia da via di informatia	n (Section 44)

See toxicological information (Section 11)

3. Composition/information on ingredients		
Name	CAS number <u>%</u>	
Gasoline	86290-81-5 90 - 97	
Toluene	108-88-3 10 - 20	
Ethanol	64-17-5 5 - 10	
Benzene	71-43-2 0.5 - 1.5	5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First-aid measures Eve contact : Check for and remove any contact lenses. Immediately flush eves with plenty of water

	for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Inhalation	: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
Notes to physician	: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product	: Flammable.
Extinguishing media	
Suitable	: Use dry chemical, CO ₂ , alcohol-resistant foam or water spray (fog).
Not suitable	: Do not use water jet.
Special exposure hazards	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Products of combustion	 Carbon oxides (CO, CO2), nitrogen oxides (NOx), lead, aldehydes, ketones, phenols, polynuclear aromatic hydrocarbons, smoke and irritating vapours as products of incomplete combustion.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Special remarks on fire hazards	: Extremely flammable in presence of open flames, sparks, and heat. This product can accumulate static charge and ignite. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back.
Special remarks on explosion hazards	: Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire. Runoff to sewer may create fire or explosion hazard.

6. Accidental release measures

Personal precautions	:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
Environmental precautions	:	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods for cleaning up		
Small spill	:	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
Large spill	:	Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

Handling :	Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take
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Date of issue : 10/24/2012.	Internet: www.petro-canada.ca/ms	sds F	Page: 3/8
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7. Handling and storage

precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container. Ground all equipment containing material.

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Ensure the storage containers are grounded/bonded.

8. Exposure controls/personal protection

Ingredient	Exposure limits
Gasoline	ACGIH TLV (United States).
	TWA: 300 ppm 8 hour(s).
	STEL: 500 ppm 15 minute(s).
Toluene	ACGIH TLV (United States).
	TWA: 20 ppm 8 hour(s).
Ethanol	ACGIH TLV (United States).
	STEL: 1000 ppm 15 minute(s).
Benzene	ACGIH TLV (United States). Absorbed through skin.
	TWA: 0.5 ppm 8 hour(s).
	STEL: 2.5 ppm 15 minute(s).

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures	: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
Engineering measures	: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Personal protection	
Respiratory	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

8. Exposure controls/personal protection

Hands	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: polyvinyl alcohol (PVA), Viton®. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
Eyes	:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Skin	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Environmental exposure controls	:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Physical state	: Clear liquid.
Flash point	: -43°C (-45.4°F) (NFPA)
Auto-ignition temperature	: Not available.
Flammable limits	: Lower: 1.4% (NFPA) Upper: 7.6% (NFPA)
Colour	: Clear to slightly yellow, undyed liquid. May be dyed for taxation purposes.
Odour	: Gasoline
Odour threshold	: Not available.
рН	: Not available.
Boiling/condensation point	: 26 to 200°C (78.8 to 392°F)
Melting/freezing point	: Not available.
Relative density	: 0.7 to 0.78 kg/L @ 15°C (59°F)
Vapour pressure	: 41 to 107 kPa (307 to 802 mm Hg) @ 15°C (59°F)
Vapour density	: 3 to 4 [Air = 1] (NFPA)
Volatility	: Not available.
Evaporation rate	: Not available.
Viscosity	: 0.6 cSt @ 40°C (104°F)
Pour point	: Not available.
Solubility	: Hydrocarbon components virtually insoluble in water. Ethyl alcohol is completely soluble in water.

10 . Stability and reactivity

Chemical stability	: The product is stable.
Hazardous polymerisation	: Under normal conditions of storage and use, hazardous polymerisation will not occur.
Materials to avoid	: Reactive with oxidising agents, acids and interhalogens.
Hazardous decomposition products	: May release COx, NOx, aldehydes, ketones, phenols, polynuclear aromatic hydrocarbons, smoke and irritating vapours when heated to decomposition.

11. Toxicological information

Acute toxicity

Product/ingredient name Gasoline Toluene Ethanol Benzene			Result LD50 De LD50 Or LD50 Or LD50 Or LC50 Inl Vapour LC50 Inl Vapour LD50 De LD50 Or LC50 Inl Vapour	ral ermal ral halation halation ermal ral	Spe Rab Rat Rab Rat Rat Rat Rat Rat	bit	>{ 13 12 63 75 >{ 93	ose 5000 mg/l 3600 mg/l 2125 mg/l 36 mg/kg 585 ppm 32380 ppl 32380 ppl 3240 mg/l 30 mg/kg 3700 ppm	kg kg m kg	Expo - - - 4 hou 4 hou - - 4 hou	irs irs
Conclusion/Summary	: N	ot availab	le.								
Chronic toxicity											
Conclusion/Summary	: N	ot availab	le.								
Irritation/Corrosion											
Conclusion/Summary	: N	ot availab	le.								
<u>Sensitiser</u>											
Conclusion/Summary	: N	ot availab	le.								
Carcinogenicity											
Conclusion/Summary	: N	ot availab	le.								
Classification											
Product/ingredient name		4	CGIH	IARC		EPA	NIC	OSH	NTP		OSHA
Gasoline			.3	2B		-	-		-		-
Toluene		-	4	3		D	-		-		-
Ethanol Benzene			.3 .1	- 1		- A	- +		- Provei	n	- +
Mutagenicity				•		Α	•		11000		•
Conclusion/Summary	• N	ot availab	le								
Teratogenicity		or availab	10.								
Conclusion/Summary	. т	horo io o v	voalth of i	nformatio	n aha	ut the terat	logonio	bozordo		ono in	the
Conclusion/Summary	lit	erature; h	owever, b	ased upo	n prof		Idgeme	ent regard			of evidence,
Reproductive toxicity											
Conclusion/Summary	: N	ot availab	le.								

12. Ecological information

Environmental effects	: No known significant effects or critical hazards.
Aquatic ecotoxicity	
Conclusion/Summary	: Not available.
Biodegradability	
Conclusion/Summary	: Not available.

13. Disposal considerations

Waste disposal

: The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1203	GASOLINE	3	II		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15. Regulatory information

United States	
HCS Classification	: Flammable liquid Irritating material Carcinogen
<u>Canada</u>	
WHMIS (Canada)	: Class B-2: Flammable liquid Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).
•	essified in accordance with the hazard criteria of the Controlled Products Regulations and information required by the Controlled Products Regulations.
International regulations	
Canada inventory	: All components are listed or exempted.
United States inventory (TSCA 8b)	: All components are listed or exempted.

Europe inventory : All components are listed or exempted.

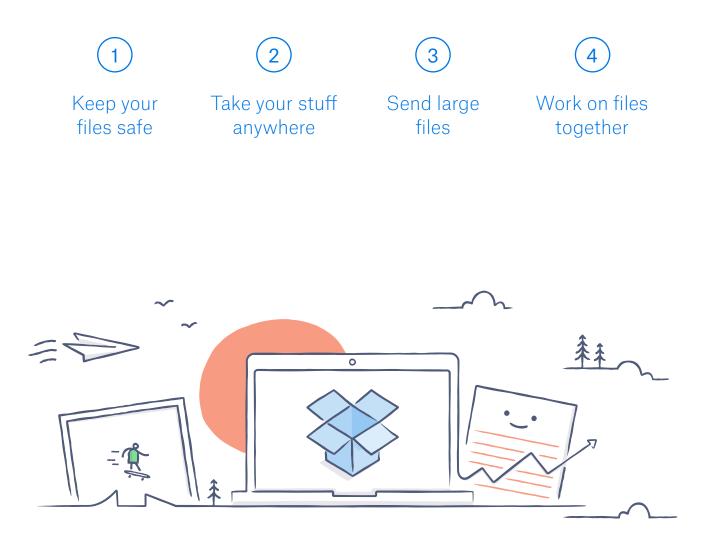
16. Other information	ation
Label requirements	: FLAMMABLE LIQUID AND VAPOUR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. CONTAINS MATERIAL WHICH MAY CAUSE HERITABLE GENETIC EFFECTS.
Hazardous Material	: Health 3
Information System (U.S.A.)	Flammability 3
	Physical hazards 0
	Personal protection H
National Fire Protection Association (U.S.A.)	: Health 2 0 Instability Special
References	: Available upon request. ™ Trademark of Suncor Energy Inc. Used under licence.
Date of printing	: 10/24/2012.
Date of issue	: 24 October 2012
Date of previous issue	: 4/22/2010.
Responsible name	: Product Safety - DSR
Indicates information that	has changed from previously issued version.
For Copy of (M)SDS	: Internet: www.petro-canada.ca/msds
	Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

For Product Safety Information: (905) 804-4752

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. Learn how to get started with Dropbox:



Welcome to Dropbox!

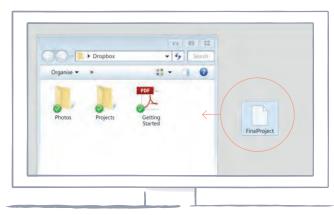
Keep your files safe

Dropbox lets you save photos, docs, videos and other files all in one place — and automatically backs up your stuff. So if your computer breaks down or you leave your phone on the train, your stuff is safe.

Add files to your Dropbox

On Windows or Mac

- 1. Make sure you've installed the desktop app on your computer.
- 2. Drag and drop files into the Dropbox folder. That's it!





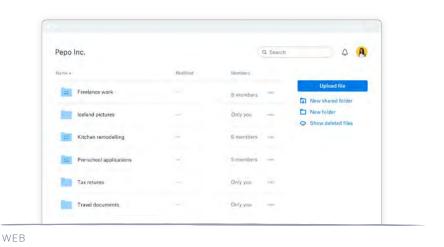
WINDOWS

continued

On dropbox.com

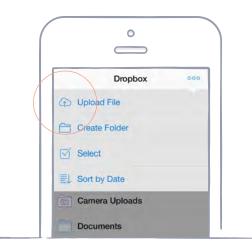
home

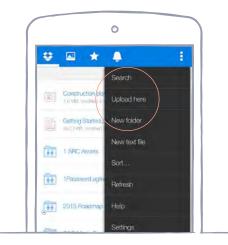
- 1. Sign in to dropbox.com.
- 2. Click the blue **Upload file** button at the top of the window.
- 3. Choose the file you'd like to add and click **Open**.
- 4. Or, just drag and drop files directly into your web browser.



On iOS or Android

- 1. Tap the More actions menu (...) icon in the top right corner.
- 2. Choose Upload File (in iOS) or Upload here (in Android).
- 3. Select the location you'd like to upload files from.
- 4. Select the files you'd like to add, and then tap **Upload**.





IOS

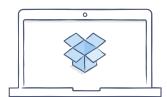
ANDROID

2

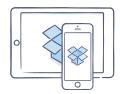
Take your stuff anywhere

Save your photos and docs to Dropbox, and access them on any computer, phone, or tablet with the Dropbox app. Every file you save to Dropbox is automatically synced to all your devices, so you can get to your stuff from anywhere.

Install the desktop and mobile apps









Get the iOS app

Get the Android app



3

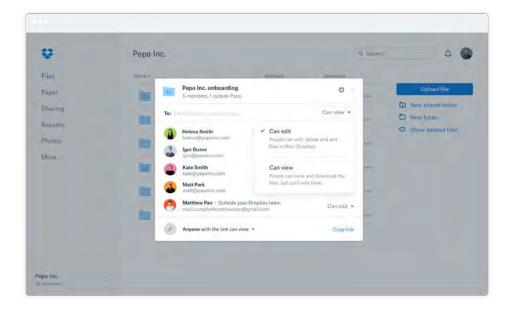
Send large files

Need to send a file? Just add it to your Dropbox, share a link to it, and you're done. No matter how large the file is, anyone with the link can view or download a copy — even if they don't have a Dropbox account.

Share a link to a file

On dropbox.com

- 1. Sign in to dropbox.com, and find the file or folder you'd like to share.
- 2. Hover over the file or folder, and click the **Share** button that appears.



3. Enter the email addresses of the people you want share a file with and click **Share**. Or click **Copy link** to share with anyone, even if they don't use Dropbox. You can copy and paste the link into an email, instant message, or wherever you'd like people to access it.



home

- 1. <u>Install the Dropbox desktop app</u> if you haven't already.
- 2. Open your Dropbox folder, and find the file or folder you'd like to share.
- 3. Right-click on the file and select **Copy Dropbox Link**. The link will be copied automatically. Just paste it wherever you'd like.

Dropbox (Personal)	100	
😌 Dropbox (Pepo)		
 Event Planning Accounts Payable 	business redesign.pdf	business content Approval flow.docx August terms.txt
DfB Redesign		strategy.docx
Downloads		1000 C
Documents		
Ch populicity		Open in New Window
	Planning.rtf	Content Move to Trash
		😂 Share
		Copy Dropbox Link
		View on Dropbox.com

continued

4

Work on files together

Collaborate on presentations and docs — without emailing files back and forth. Just create a shared folder and add other people to it. When you edit a file in a shared folder, everyone instantly gets the latest version on their devices.

Set up a shared folder

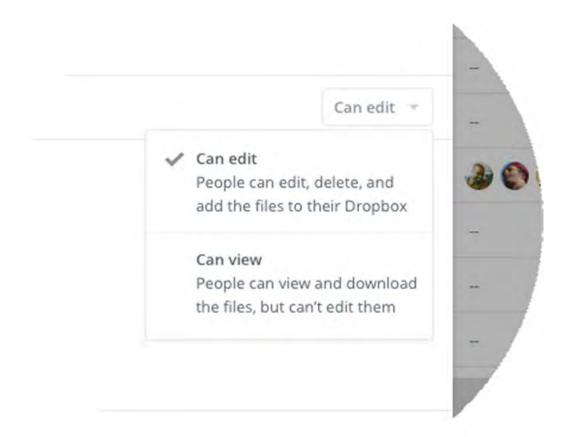
On dropbox.com

- 1. Sign in to dropbox.com, and click on the **Sharing** tab on the left side of the window.
- 2. Choose **New shared folder** at the top of the window, select **I'd like to create and share a new folder**, then click **Next**.
- 3. Enter a name for your shared folder, then click Next.

000	
Share a folder	×
What would you like to do?	
 I'd like to create and share a new folder 	
○ I'd like to share an existing folder	
Next	

- 4. Enter the email addresses of the people you want to invite.
- 5. Add a personal message and set **Can edit** or **Can view** permissions, and then click **Share**.

home



5

Hooray, now you're a Dropbox all-star!

You're all set to use Dropbox. Get started now, and let us know what you think on <u>Twitter</u>.

See more tips and tricks

Check out our <u>Help Centre</u> to learn how to recover old versions of files, save space on your computer with Selective Sync, and explore other advanced features.



Dropbox also includes a number of security tools to help you further protect your account and data. Visit our <u>Security page</u> to learn how to create a strong, unique password, enable two-step verification, and adjust your security settings.

There's even more to Dropbox

Need more space or extra sharing controls? Learn more about <u>Dropbox Plus</u>. Looking for a better way to collaborate at work? Learn more about <u>Dropbox Business</u>.



continued



Happy Dropboxing!



GREASED LIGHTNIN	IG® MULTI-PURPOSE CLEANER & DEC	GREASER	
Version: 1.1	Revision Date: 01/01/2014	Print Date: (03/10/2014
SECTION 1. PRODUCT AND C	OMPANY IDENTIFICATION		
Product name:	GREASED LIGHTNING® MULTI-PURPOSE CLEANE	R & DEGREASER	
Product Use Description:	Home Care Product		
Company:	HomeCare Labs, Inc. P.O. Box 491150 Lawrenceville, GA 30049-1002 Telephone: (800) 949-7946		
Emergency telephone number:	CHEMTREC: (24 hours) 800-424-9300, 703-527-3887 Poison Control Center (Medical) :: (877) 800-5553		
	For additional emergency telephone numbers see section 16	of the Safety Data She	et.
Prepared by	Product Safety Department		
01/01/2014			

SECTION 2. HAZARDS IDENTIFICATION

Danger			
<u>Form</u> : liquid	<u>Colour</u> : colourless	<u>Odour</u> : pleasant	
Hazard Summary	Causes e Harmful if Harmful b	s may occur. ye irritation. swallowed. y inhalation. kin irritation.	
OSHA Hazards	: IRRITAN	T	
Potential Health Et	fects		
Primary Routes of E	Entry : Eye conta Inhalation Ingestion Skin cont		
Inhalation	: Harmful if	inhaled. espiratory tract irritation.	

Revision Date: 01/01/2014	Print Date: 03/10/20
: Causes skin irritation.	
: Eye burns may occur. Causes eye irritation.	
: Ingestion may cause gastrointestinal irritation, nause vomiting and diarrhoea.	a,
: None known.	
No component of this product present at levels greater t identified as probable, possible or confirmed human car	
No component of this product present at levels greater equal to 0.1% is identified as a carcinogen or potential of	than or
No component of this product present at levels greater t	
No component of this product present at levels greater t identified as a carcinogen or potential carcinogen by AC	han or equal to 0.1% is
	 Eye burns may occur. Causes eye irritation. Ingestion may cause gastrointestinal irritation, nause vomiting and diarrhoea. None known. No component of this product present at levels greater t identified as probable, possible or confirmed human car No component of this product present at levels greater equal to 0.1% is identified as a carcinogen or potential oby OSHA. No component of this product present at levels greater t identified as a known or anticipated carcinogen by NTP. No component of this product present at levels greater t identified as a known or anticipated carcinogen by NTP.

· ·	
Component / CAS-No.	Weight percent
	rieigin percent
2-(2-butoxyethoxy)ethanol (Aerosol)	< 5 %
112-34-5	

SECTION 4. FIRST AID MEASURES

Inhalation	: Remove person to fresh air. If signs/symptoms continue, get medical attention. Call a physician or poison control centre immediately.
Skin contact	: Rinse immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Eye contact	 Rinse immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsi eye. Call a physician or poison control centre immediately.
Ingestion	 If swallowed, DO NOT induce vomiting. Drink 1 or 2 glasses of water. Call a physician or poison control centre immediately.

Flammable properties

rsion: 1.1	Revision Date: 01/01/2014	Print Date: 03/10/20
Flash point	: > 200 °F (> 93 °C)	
Fire fighting		
Suitable extinguishing media	: Use extinguishing measures that are appropriat surrounding environment.	te to local circumstances and the
Further information	: There are no unusual fire and explosion hazard	ls known.
Protective equipment and p	recautions for firefighters	
Special protective equipment for firefighters	: In the event of fire, wear self-contained breathir Thoroughly decontaminate fire fighting equipme wearing apparel after the incident.	
CTION 6. ACCIDENTAL RELE	ASE MEASURES	
Methods for containment / Methods for cleaning up	 Using appropriate protective clothing and safety material. Clean-up methods - small spillage Flush with plenty of water. Clean-up methods - large spillage Soak up with inert absorbent material. Using clean dedicated equipment, sweep and s contaminated soil, and other contaminated material. 	scoop all spilled material,
Additional advice	: Treat recovered material as described in the se	ction "Disposal considerations".
CTION 7. HANDLING AND STO	DRAGE	
Handling		
Handling procedures	 Avoid contact with mucous membranes. Avoid contact with skin, eyes and clothing. Mix only with water. Do not mix with other chemicals. Wash hands thoroughly with soap and water af drinking or using tobacco. Do not handle until all safety precautions have been supported and the set of the	
Storage		
Storage Requirements for storage areas and containers	: Store in original container. Store in a cool, dry, well ventilated area away fr Keep out of reach of children. Keep away from animals.	rom heat or open flame.
Requirements for storage areas and containers	Store in a cool, dry, well ventilated area away fr Keep out of reach of children.	rom heat or open flame.
Requirements for storage areas and containers	Store in a cool, dry, well ventilated area away fr Keep out of reach of children. Keep away from animals.	rom heat or open flame.
Requirements for storage areas and containers	Store in a cool, dry, well ventilated area away fr Keep out of reach of children. Keep away from animals.	rom heat or open flame.

sion: 1.1	Revision Date: 01/01/2014	Print Date: 03/10/20
Engineering measures		
Engineering measures	 Use with adequate ventilation. Not expected to present a significant inhalat conditions of normal use. Ensure that eyewash stations and safety she location. 	
Personal protective equipr	nent	
Eye protection	: Safety glasses with side-shields	
Hand protection	: Wear rubber gloves.	
Respiratory protection	: No personal respiratory protective equipmer If product is used in an area with poor ventile a respirator that meets OSHA/ANSI standar	ation and mist or vapor is expected
Hygiene measures	: Handle in accordance with good industrial h Remove and wash contaminated clothing be	
CTION 9. PHYSICAL AND CH Appearance		
Appearance Form	IEMICAL PROPERTIES	
Appearance Form Colour	IEMICAL PROPERTIES	
Appearance Form Colour Odour	IEMICAL PROPERTIES	
Appearance Form Colour Odour Safety data	IEMICAL PROPERTIES : liquid : colourless : pleasant	
Appearance Form Colour Odour Safety data Flash point	HEMICAL PROPERTIES : liquid : colourless : pleasant : > 200 °F (> 93 °C)	
Appearance Form Colour Odour Safety data Flash point pH	HEMICAL PROPERTIES : liquid : colourless : pleasant : > 200 °F (> 93 °C) : 12.5 - 13.0	
Appearance Form Colour Odour Safety data Flash point pH Freezing point	HEMICAL PROPERTIES : liquid : colourless : pleasant : > 200 °F (> 93 °C) : 12.5 - 13.0 : Note: no data available	
Appearance Form Colour Odour Safety data Flash point pH Freezing point Boiling point/boiling range	HEMICAL PROPERTIES : liquid : colourless : pleasant : > 200 °F (> 93 °C) : 12.5 - 13.0 : Note: no data available : 214.9 °F (101.6 °C)	
Appearance Form Colour Odour Safety data Flash point pH Freezing point Boiling point/boiling range Vapour pressure	HEMICAL PROPERTIES : liquid : colourless : pleasant : > 200 °F (> 93 °C) : 12.5 - 13.0 : Note: no data available : 214.9 °F (101.6 °C) : no data available	
Appearance Form Colour Odour Safety data Flash point pH Freezing point Boiling point/boiling range Vapour pressure Density	HEMICAL PROPERTIES : liquid : colourless : pleasant : > 200 °F (> 93 °C) : 12.5 - 13.0 : Note: no data available : 214.9 °F (101.6 °C) : no data available : 0.995 - 1.015 g/cm3	

/ersion: 1.1	Revision Date: 01/01/2014	Print Date: 03/10/2014
ECTION 10. STABILITY AND F	REACTIVITY	
Conditions to avoid	: Remarks: High temperatures. Poor ventilation. Contamination	
Materials to avoid	: Remarks: Ammonia Chlorine bleach Oxidizing agents Do not mix with other chemicals.	
Hazardous decomposition products	: Note: Carbon oxides	
Hazardous reactions	: Hazardous polymerisation does not occur.	
ECTION 11. TOXICOLOGICAL	INFORMATION	
Skin irritation	: Remarks: May cause skin irritation.	
Eye irritation	: Result: Irritating to eyes. Remarks: Eye burns may occur.	
Further information on eco		
Further information on eco Additional ecological information	logy : no data available	
Additional ecological	IDERATIONS	s.
Further information on eco Additional ecological information ECTION 13. DISPOSAL CONS	ilogy : no data available IDERATIONS	
Further information on eco Additional ecological information SECTION 13. DISPOSAL CONS Further information Contaminated packaging	 Plogy no data available IDERATIONS In accordance with local and national regulation. Recycle or dispose of container in trash. Do not re-use empty containers. Rinse thoroughly before discarding in trash. Offer rinsed packaging material to local recycling 	
Further information on eco Additional ecological information SECTION 13. DISPOSAL CONS Further information Contaminated packaging	 Plogy no data available IDERATIONS In accordance with local and national regulation. Recycle or dispose of container in trash. Do not re-use empty containers. Rinse thoroughly before discarding in trash. Offer rinsed packaging material to local recycling 	
Further information on eco Additional ecological information ECTION 13. DISPOSAL CONS Further information Contaminated packaging ECTION 14. TRANSPORT INFO DOT	 Plogy no data available IDERATIONS In accordance with local and national regulation. Recycle or dispose of container in trash. Do not re-use empty containers. Rinse thoroughly before discarding in trash. Offer rinsed packaging material to local recycling 	

sion: 1.1	Revision Date: 01/01/2014	Print Date: 03/10/2
Environmentally hazardous	: no	
IMDG		
UN number Description of the goods	 3267 CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (sodium hydroxide) 	
Class	: 8	
Packing group		
EmS Number 1 EmS Number 2	: F-A : S-B	
Marine pollutant	: no	
Environmentally hazardous	: no	
Not recommended for shipn Limited Quantity exemption		
TION 15. REGULATORY IN	IFORMATION	
OSHA Hazards	: Irritant	
CERCLA Reportable Quantity	:	
SARA 302 Reportable Quantity	:	
SARA 311/312 Hazards	: Acute Health Hazard	
EPCRA - EMERGENCY PL	ANNING COMMUNITY RIGHT - TO - KNOW	
SARA 302 Reportable Quantity	:	
SARA 304 Components	: This material does not contain any components with a 304 EHS RQ.	a section
The components of this p US.TSCA	roduct are reported in the following inventories: On TSCA Inventory	
DSL	All components of this product are on the Canadian D	SL list.
AICS	Not in compliance with the inventory	
NZIOC	Not in compliance with the inventory	

	NING® MULTI-PURPOSE CLEANER &	
rsion: 1.1	Revision Date: 01/01/2014	Print Date: 03/10/2
ENCS	Not in compliance with the inventory	
KECI	Not in compliance with the inventory	
PICCS	Not in compliance with the inventory	
IECSC	Not in compliance with the inventory	
Further information HMIS Classification	: Health hazard: 3 Flammability: 1 Physical hazards: 0	
NFPA Classification	: Health hazard: 3 Fire Hazard: 1 Reactivity Hazard: 0	
NFPA Classification	Fire Hazard: 1	3 0
NFPA Classification	Fire Hazard: 1	
NFPA Classification	Fire Hazard: 1	
NFPA Classification	Fire Hazard: 1 Reactivity Hazard: 0	

Mexico:

SAP 6.0

7 / 8

SDS Number: 000000035911

+52 555 004 8763

Version: 1.1

Revision Date: 01/01/2014

Print Date: 03/10/2014

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Material Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Havoline® ATF+4® Automatic Transmission Fluid

Product Use: Transmission Fluid Product Number(s): CPS221859 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Road San Ramon, CA 94583 United States of America

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information email : lubemsds@chevron.com Product Information: 800-LUBE-TEK MSDS Reguests: 800-414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	80 - 100 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed. **Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause

respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 190 °C (374 °F) (Min)

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed. Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select

protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3			

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Red Physical State: Liquid Odor: Petroleum odor pH: Not Applicable Vapor Pressure: <0.01 @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 Boiling Point: >315°C (599°F) Solubility: Soluble in hydrocarbon solvents; insoluble in water. Freezing Point: Not Applicable Density: 0.8476 kg/l @ 15°C (59°F) Viscosity: 7.5 cSt @ 100°C (212°F) (Typical) Evaporation Rate: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected) Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

S:	2. 3. 4.	Fire Hazard: Sudden Release of Pressure Hazard:	NO NO NO	NO
	••	Reactivity Hazard:	NO	

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1 01-2A=IARC Group 2A 01-2B=IARC Group 2B 02=NTP Carcinogen 03=EPCRA 313 04=CA Proposition 65 05=MA RTK 06=NJ RTK 07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States). One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

One or more components does not comply with the following chemical inventory requirements: ENCS (Japan).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Automatic transmission fluid)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1,16.

Revision Date: SEPTEMBER 28, 2011

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average				
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit				
	CAS - Chemical Abstract Service Number				
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code				
API - American Petroleum Institute	MSDS - Material Safety Data Sheet				
CVX - Chevron	NFPA - National Fire Protection Association (USA)				
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)				
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration				

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.



Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Havoline® Universal Prediluted 50/50 Anti-Freeze/Coolant - Bittered

Product Use: Antifreeze/Coolant Product Number(s): CPS227063 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com Product Information: (800) LUBE TEK MSDS Requests: (800) 414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Ethylene Glycol	107-21-1	40 - 60 %weight
Potassium 2-ethylhexanoate	3164-85-0	1 - 5 %weight

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- MAY BE HARMFUL OR FATAL IF SWALLOWED

- MAY CAUSE DIZZINESS, DROWSINESS AND REDUCED ALERTNESS

- CONTAINS MATERIAL THAT MAY CAUSE HARM TO THE UNBORN CHILD

- CONTAINS MATERIAL THAT MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS BASED ON ANIMAL DATA

- CONTAINS MATERIAL THAT MAY CAUSE DAMAGE TO:

- KIDNEY

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Toxic; may be harmful or fatal if swallowed.

Inhalation: Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:

Reproduction and Birth Defects: Contains material that may cause adverse reproductive effects if swallowed based on animal data.Contains material that may cause harm to the unborn child based on animal data.

Target Organs: Contains material that may cause damage to the following organ(s) following repeated inhalation at concentrations above the recommended exposure limit: Kidney

See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue or if any other symptoms develop.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 2 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

 Flashpoint:
 Not Applicable

 Autoignition:
 No data available

 Flammability (Explosive) Limits (% by volume in air):
 Lower:
 Not Applicable

 Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames. Dry Chemical, CO2, AFFF Foam or alcohol resistant foam.

Revision Number: 2 Revision Date: OCTOBER 07, 2011 Havoline® Universal Prediluted 50/50 Anti-Freeze/Coolant - Bittered MSDS: 14879

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling.

General Handling Information: Do not taste or swallow antifreeze or solution. Keep out of the reach of children and animals.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

General Storage Information: Do not store in open or unlabeled containers.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user

should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Natural rubber, Neoprene, Nitrile Rubber, Polyvinyl Chloride (PVC or Vinyl).

Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors, Dusts and Mists.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Ethylene Glycol	ACGIH			100	
				mg/m3	

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Yellow Physical State: Liquid Odor: Faint or Mild pH: 8 - 8.6Vapor Pressure: 0.12 mmHg (Typical) @ 20 °C (68 °F) Vapor Density (Air = 1): 2.1 Boiling Point: 108.9°C (228°F) (Typical) Solubility: Miscible Freezing Point: -18°C (-0.4°F) (Min) Specific Gravity: 1.12 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) Viscosity: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: Aldehydes (Elevated temperatures), Ketones (Elevated

Havoline® Universal Prediluted 50/50 Anti-Freeze/Coolant - Bittered MSDS: 14879 temperatures) Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains ethylene glycol (EG). The toxicity of EG via inhalation or skin contact is expected to be slight at room temperature. The estimated oral lethal dose is about 100 cc (3.3 oz.) for an adult human. Ethylene glycol is oxidized to oxalic acid which results in the deposition of calcium oxalate crystals mainly in the brain and kidneys. Early signs and symptoms of EG poisoning may resemble those of alcohol intoxication. Later, the victim may experience nausea, vomiting, weakness, abdominal and muscle pain, difficulty in breathing and decreased urine output. When EG was heated above the boiling point of water, vapors formed which reportedly caused unconsciousness, increased lymphocyte count, and a rapid, jerky movement of the eyes in persons chronically exposed. When EG was administered orally to pregnant rats and mice, there was an increase in fetal deaths and birth defects. Some of these effects occurred at doses that had no toxic effects on the mothers. We are not aware of any reports that EG causes reproductive toxicity in human beings.

2-Ethylhexanoic acid (2-EXA) caused an increase in liver size and enzyme levels when repeatedly administered to rats via the diet. When administered to pregnant rats by gavage or in drinking water,
2-EXA caused teratogenicity (birth defects) and delayed postnatal development of the pups. Additionally,
2-EXA impaired female fertility in rats. Birth defects were seen in the offspring of mice who were administered sodium 2-ethylhexanoate via intraperitoneal injection during pregnancy.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

Havoline® Universal Prediluted 50/50 Anti-Freeze/Coolant - Bittered MSDS: 14879

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PROPRIETARY ANTIFREEZE PREPARATION IN NON-BULK PACKAGING; NOT REGULATED FOR TRANSPORT UNDER 49 CFR

Additional Information: Bulk shipments containing a reportable quantity (RQ, 5000 pounds or more) of ethylene glycol in a single packaging are transported as hazardous material. The shipping description is: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL CONTAINS BITTERANT), 9, III, RQ (ETHYLENE GLYCOL)

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER ICAO TI OR IATA DGR

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

- 1. Immediate (Acute) Health Effects: Delayed (Chronic) Health Effects: YES 2. 3. Fire Hazard: NO Sudden Release of Pressure Hazard: NO 4 NO
- 5. Reactivity Hazard:

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1
01-2A=IARC Group 2A
01-2B=IARC Group 2B
02=NTP Carcinogen

03=EPCRA 313 04=CA Proposition 65 05=MA RTK 06=N.I RTK 07=PA RTK

The following components of this material are found on the regulatory lists indicated. 05, 06, 07 Ethylene Glycol

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), IECSC (China), PICCS (Philippines), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: ENCS

Havoline® Universal Prediluted 50/50 Anti-Freeze/Coolant - Bittered **MSDS**: 14879

YES

(Japan), KECI (Korea).

NEW JERSEY RTK CLASSIFICATION:

Refer to components listed in Section 2.

WHMIS CLASSIFICATION:

Class D, Division 1, Subdivision B: Toxic Material -Acute Lethality Class D, Division 2, Subdivision A: Very Toxic Material -Teratogenicity and Embryotoxicity Reproductive Toxicity Class D, Division 2, Subdivision B: Toxic Material -Chronic Toxic Effects

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 2 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 2* Flammability: 1 Reactivity: 0 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : ANTIFREEZE/COOLANT 3 - AFC3

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1, 3, 9, 15, 16.

Revision Date: OCTOBER 07, 2011

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental	IMO/IMDG - International Maritime Dangerous Goods
Industrial Hygienists	Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on	OSHA - Occupational Safety and Health
Cancer	Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

**** MATERIAL SAFETY DATA SHEET ****

28201 - HEET Gas Line Antifreeze

SEC 1 - PRODUCT AND MANUFACTURER INFO	SEC 9 - PHYS, CHEM PROPERTIES
SEC 2 - COMPOSITION INFORMATION	SEC 10 - STABILITY, REACTIVITY
SEC 3 - HAZARDS IDENTIFICATION	SEC 11 - TOXICOLOGY INFORMATION
SEC 4 - FIRST AID MEASURES	SEC 12 - ECOLOGICAL INFORMATION
SEC 5 - FIRE FIGHTING MEASURES	SEC 13 - DISPOSAL CONSIDERATIONS
SEC 6 - ACCIDENTAL RELEASE MEASURES	SEC 14 - TRANSPORT INFORMATION
SEC 7 - HANDLING AND STORAGE	SEC 15 - REGULATORY INFORMATION
SEC 8 - EXPOSURE, PERS. PROTECTION	SEC 16 - ADDITIONAL INFORMATION

**** SECTION 1 - CHEMICAL PRODUCT AND MANUFACTURER IDENTIFICATION ****

Product Name: 28201 - HEET Gas Line Antifreeze

Part Number:

28201

Product CAS: (None)

Product Code: 28201

Synonyms: 28201 - HEET Gas Line Antifreeze

MANUFACTURER IDENTIFICATION

Name:Gold Eagle CompanyAddress:4400 S. Kildare Blvd.City:ChicagoState:ILZip:60632-4372

For information call: 773-376-4400

Emergency Number: N/A

Emergency Agency: INFOTRAC

Agency Number: 1-800-535-5053

MSDS Effective Date: 1/1/1980

MSDS Supersedes Date: 3/11/2010

Miscellaneous: Product CAS: Mixture

Brief Description: Gas line dryer and antifreeze for automobiles.

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Chemical Name Methanol Proprietary Additive	CAS 67-56-1 (none)	MIN 99 1	MAX 99 1
Miscellaneous: CHEMICAL NAME Methanol	LIMIT VALUES PEL 200 ppm PEL 260 mg/m3		
Proprietary Additive (CAS#:Mixture)	N/A		

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**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW:

NFPA: Health: 1 Fire: 3 Reactivity: 0 Specific Hazard: None

HMIS: Health: 1 Flammability: 3 Reactivity: 0 PPE: B

Miscellaneous:

This product does not contain any components above de minimus concentrations that are considered carcinogenic by OSHA, IARC or NTP.

POTENTIAL HEALTH EFFECTS

Target Organs/Primary Route(s) of Entry:

Eye:

Mild irritant.

Skin:

Prolonged or repeated skin contact may cause dermatitis, scaling and possible systemic effects.

Ingestion:

POISON-Oral human lowest lethal dose = 6.4 g/kg

Inhalation:

Poisonous, narcotic chemical affecting central nervous system resulting in: dizziness, nausea, visual impairment, narcosis and muscular impairment.

Miscellaneous:

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**** SECTION 4 - FIRST AID MEASURES ****

Eye:

If the product contacts the eyes, immediately wash the eyes with large quantities of room temperature water for at least 15 minutes, occasionally lifting the lower and upper lids. Get medical attention immediately. A follow up visit to an ophthalmologist should be made. Contact lenses should not be worn when working with this chemical.

Skin:

If the product contacts the skin, promptly wash the contaminated skin with soap and water for at least 15 minutes. If this product penetrates the clothing, promptly remove the clothing and wash the skin with soap and water. Systemic effects may be delayed 18 to 72 hours, therefore keep individual under observation.

Ingestion:

If this product is ingested and the person is conscious, induce vomiting, then give 2 teaspoons of baking soda in a glass of water. DO NOT INDUCE AN UNCONSCIOUS PERSON TO VOMIT. Get medical attention immediately.

Inhalation:

Move the exposed person to fresh air at once and call emergency medical care. If breathing has stopped, give artificial respiration. If breathing is difficult, give humidified oxygen.

Notes to Physician: No data available.

No data available.

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**** SECTION 5 - FIRE FIGHTING MEASURES ****

Flash Point: 52 F. (11 C.) TOC

AutoIgnition Temperature: N/A

Flammable Limits Lower Limit: Explosive Limit (LEL): 6.0

Upper Limit: Explosive Limit (UEL): 36.5

Extinguishing Media:

Use halon replacement or carbon dioxide extinguishers or alcohol foam for small fires. Water spray or fog can cool fire but may not be effective in extinguishing fire. Large fires should be extinguished with alcohol foam. Use water spray to cool containers exposed to fire. Containers may explode in heat or fire.

Unusual Fire and Explosion Hazards:

Dangerous fire and explosion hazard when exposed to heat or flame. Methanol is extremely flammable and forms explosive mixtures with air. Methanol vapors may travel considerable distance to a source of ignition and flash back.

Special Fire Fighting Procedures:

Wear NIOSH approved SCBA respirator in the positive pressure mode and chemical protective clothing.

General Information: Flammable Limits: 6.0 to 36.5

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**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

Small Spill: Remove sources of heat or ignition, provide adequate ventilation, contain leak using absorbent, inert, non-combustible material.

Large Spill: Contain spill, transfer to secure containers. In the event of an uncontrolled material release, the user should determine if release is reportable under applicable laws and regulations.

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**** SECTION 7 - HANDLING AND STORAGE ****

Handling: See other sections of MSDS.

Storage: See other sections of MSDS.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

GENERAL HYGIENE CONSIDERATIONS:

Use normal hygiene practices.

OTHER PRECAUTIONS:

Methanol waste and material contaminated with methanol would be regulated as a hazardous waste material under the hazardous waste number U154.

ENGINEERING CONTROLS:

Local Exhaust: Provide local ventilation to maintain exposure levels below recommended exposure limits.

Mechanical (General): In confined spaces, mechanical ventilation may be required.

Special Ventilation: N/A

Other Ventilation: N/A

PERSONAL PROTECTIVE EQUIPMENT

Eyes/face:

Use splash proof chemical, safety goggles or appropriate full-face respirator. Contact lenses should not be worn when working with this chemical.

Skin:

Use natural rubber or neoprene gloves as required.

Respirators:

Do not use air purifying respirator. Use NIOSH approved respirator approved supplied or self contained respirator. Respirators must be selected based on the airborne levels found in the workplace and must not exceed the working limits of the respirator.

Other Protective Clothing/Equipment:

If there is a possibility of exposure of an individual's body to methanol, wear body covering work clothes to avoid prolonged or repeated exposure.

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**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Appearance/Odor: Yellow liquid, solvent odor

pH: N/A

Vapor Pressure: (MM HG): 97.0

Vapor Density(Air=1): 1.1

Evaporation Rate: N/A

Viscosity: N/A

Boiling Point: 148 F. (65 C.) N/A

Freezing/Melting Point: N/A

Decomposition Temperature: N/A

Solubility in Water: Soluble

Specific Gravity: 0.795

Molecular Formula: N/A

Molecular Weight: N/A

VOC Coating (minus water): 0 Lbs/Gallon

Coating Density: 0 Lbs/Gallon

Solvent Density: 0 Lbs/Gallon

Percent Solvent (volume): 0

Percent Solids (volume): 0

Percent Water (volume): 0

Percent Volatile by Weight: 0

Miscellaneous: % Volatile/Volume: 100.0

Specific Gravity (H2O = 1): N/A

Percent Solvent (Volume): N/A

Percent Solids (Volume): N/A

Percent Water (Volume): N/A

Product is flammable, keep away from sources of ignition, combustibles, oxidizing material and acid. Store in an area equipped with automatic sprinklers or fire extinguishing system. Empty containers contain product residues, assume empty container to have the same hazards as full containers.

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**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability: Stable: Yes

Conditions to Avoid: Store in a well ventilated place away from sources of ignition, combustibles, oxidizing materials and acid.

Incompatibilities with Other Materials:

Strong oxidizing agents, aluminum, zinc, or metals that displace hydrogen, rubber and rubber based coatings, chromic anhydride, lead perchlorate and perchloric acids.

Hazardous Decomposition Products:

Excessive heating and/or incomplete combustion will produce carbon monoxide.

Hazardous Polymerization:

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**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

No data available.

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**** SECTION 12 - ECOLOGICAL INFORMATION ****

No data available.

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**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of product in accordance with local, state, and federal regulations. Before attempting clean up, refer to other sections of MSDS for hazard warning information.

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**** SECTION 14 - TRANSPORT INFORMATION ****

Transportation Information: Shipping Information (CFR 49 and IMDG):

Proper Shipping Name: Gasoline Additive, N.O.I. DOT Hazard Class: Consumer commodity, ORM-D DOT UN Number: None required. IMDG Shipping Name: Dangerous Goods in Limited Quantities of Class 3.2 (Methanol), PGII

Label Information: No data available.

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**** SECTION 15 - REGULATORY INFORMATION ****

SARA Title III:

Section 302: None Section 304: None Section 311: Hazard categories-Fire Hazard-Yes; Acute=Yes and Chronic=Yes Section 313: Methanol, CAS# 67-56-1, 99.0%

CERCLA:

Section 311(b)(4): Requires discharges of crude oil and petroleum products in any kind or form to waters must immediately be reported to the National Response Center at (800) 424-8802.

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**** SECTION 16 - ADDITIONAL INFORMATION ****

Disclaimer: Information presented herein is believed to be factual, as it has been derived from the works and opinions of persons believed to be qualified experts. However, nothing contained in this information is to be taken as warranty or representation for which the Gold Eagle Co. bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

Prepared by: Mike Profetto

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ITW Permatex 10 Columbus Blvd. Hartford, CT 06106 USA Telephone: 1-87-Permatex (877) 376-2839 Emergency: 800-255-3924 (ChemTel) International Emergency: +01-813-248-0585

Material Safety Data Sheet

1. PRODUCT IDENTIFICAT	TION
Product Name:	98H HIGH TACK GASKET SEALANT .25PT
Item No:	80062
Product Type:	Sealant

Component	Weight%	ACGIH; TLV-TWA	OSHA PEL
ACETONE 67-64-1	35-45	500 ppm	1000 ppm; 2400 mg/m ³
METHYL ESTER OF ROSIN 58186-14-1	20-30	Not listed	Not listed
N-HEXANE 110-54-3	15-25	50 ppm	500 ppm; 1800 mg/m ³
ROSIN 8050-09-7	5-15	Not listed	Not listed
ACRYLONITRILE-BUTADIENE POLYMER 9003-18-3	<10	Not listed	Not listed

3. HAZARDS IDENTIFICATION

Toxicity:

May cause eye, skin and respiratory irritation. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as "solvent" or "painter's syndrome"). Symptoms include fatigue, concentration difficulties, anxiety, depression, rapid mood swings, and short-term memory loss. Aspiration hazard if swallowed. Prolonged and repeated exposure to methyl ethyl ketone and/or n-hexane may cause peripheral neuropathy by damaging peripheral nerve tissue (that of arms and legs) and result in muscular weakness and loss of sensation. Eye and skin contact, ingestion, inhalation

Primary Routes of Entry: Signs and Symptoms of Exposure:

osure: Excessive overexposure may cause giddiness, dizziness, headache, nausea and in extreme cases, unconsciousness and respiratory depression. Overexposure may cause eye and skin redness, difficulty breathing and vomiting.

Component	Weight%	NTP	ACGIH Carcinogens	IARC Carcinogen
ACETONE	35-45	Not known	A4 - Not Classifiable	
67-64-1			as a Human	
			Carcinogen	

Aggravated Medical Condition: Persons with preexisting respiratory, liver, kidney, eye or skin diseases may be adversely affected.

Ingestion:	Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Neve give anything by mouth to an unconscious person.
Inhalation:	Move to fresh air in case of accidental inhalation of vapours. Oxygen or artificial respiration if needed. Obtain medical attention.
Skin Contact:	Wash off with soap and water. If skin irritation persists, call a physician.
Eye Contact:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

Flash Point °F(C°):	0°F
Recommended Extinguishing Media:	Carbon Dioxide, Dry Chemicals, Foam.
Special Fire-Fighting Procedures:	Firefighters should wear self-contained breathing apparatus. Water spray may be ineffective on flames but should be used to keep fire-exposed containers cool.

5. FIRE FIGHTING MEASU	RES	
Hazardous Products of Combustion:	Oxides of carbon	
Unusual Fire/Explosion Hazards:	Closed containers may rupture or explode when exposed to extreme heat. Keep containers cool.	
Lower Explosive Limit:	2.0	
Upper Explosive Limit:	13.0	
6. ACCIDENTAL RELEASE	E MEASURES	
Spill Procedures:	Eliminate all sources of ignition. Maintain good ventilation. Take up with an inert absorbent. Store in a closed waste container until disposal.	
7. HANDLING AND STORA	AGE	
Storage:	Store away from heat, sparks or open flame. Do not store at temperatures above 100°F (38°C).	
Handling:	Avoid contact with skin and eyes. Use only in a well ventilated area. Do not take internally. Wash hands before eating and smoking. Do not use near heat, sparks or open flame. Vapors may accumulate readily and may ignite explosively.	
8. EXPOSURE CONTROLS	PERSONAL PROTECTION	
Eyes:	Safety glasses.	
Skin:	Neoprene or nitrile gloves recommended.	

Respiratory Protection:

Ventilation:

9. PHYSICAL AND CHEMICAL PROPERTIES

applicable limits.

Appearance:	Red, tacky liquid
Odor:	Solvent
Boiling Point:	135°F
pH:	Does not apply
Solubility in Water:	Partial
Specific Gravity:	0.872
VOC(Wt.%):	16.6 %
Vapor Pressure:	400 mm Hg
Vapor Density (Air=1):	2.5
Evaporation Rate:	Faster than ether

10. STABILITY AND REACTIVITY

Chemical Stability: Hazardous Polymerization: Incompatabilities: Conditions to Avoid: Hazardous Products of Combustion: Stable at normal conditions Will not occur Strong oxidizers Keep away from heat, sparks and open flame. - No smoking. Oxides of carbon

General; local exhaust ventilation as necessary to control any air contaminants to within their exposure

limits (or to the lowest feasible levels when limits have not been established) during the use of this product. An approved organic vapor respirator should be worn when exposures are expected to exceed the

11. TOXICOLOGICAL INFORMATION

See Section 3

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Recommended Method of Disposal:Disposal should be made in accordance with federal, state and local regulations.US EPA Waste Number:D001 as per 40CFR 261.21

14. TRANSPORTATION INFORMATION

DOT (49CFR 172)

U.S. Department of Transportation - DOT - 49 CFR (Ground)

DOT Shipping Name:Adhesives, Limited QuantityHazard Class:Class 3, PG IIUN/ID Number:UN 1133

14. TRANSPORTATION INFORMATION

IATA (Air)

Proper Shipping Name:
Class or Division:
UN/ID Number:

Consumer Commodity Class 9 ID 8000

IMDG (Vessel)

Proper Shipping Name:	Adhesives, Limited Quantity
Hazard Class:	Class 3, PG II
UN Number:	UN 1133

Marine Pollutant:

None

15. REGULATORY INFORMATION

SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.

N-HEXANE

California Proposition 65: WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm

TSCA Inventory Status: All components of this product are listed (or exempt) on the EPA TSCA inventory.

16. OTHER INFORMATION

 Estimated NFPA Rating:
 HEALTH 2, FLAMMABILITY 3, REACTIVITY 0.

 Estimated HMIS Classification:
 HEALTH 2, FLAMMABILITY 3, PHYSICAL HAZARD 0

 (NFPA is a registered trademark of the National Fire Protection Association)
 HMIS is a registered trademark of the National Paint and Coatings Association

Prepared By:	Denise Boyd, Manager-Environmental, Health & Safety	Revision Date: January 26, 2012
Company:	ITW Permatex 10 Columbus Blvd. Hartford, CT USA 06106	Revision Number: 7
Telephone No.:	1-87-Permatex (877) 376-2839	

HI TECH 100-50

Material Identification and Use

MANUFACTURER'S NAME	CONTROL CHEMICAL (1989) CORPORATION
MANUFACTURER'S ADDRESS	7016 30 Street SE Calgary, AB Canada T2C 1N9
EMERGENCY PHONE NUMBER	(403) 720-7044
SUPPLIER IDENTIFIER	
SUPPLIER'S ADDRESS	
SUPPLIER EMERGENCY PHONE NUMBER	
PRODUCT IDENTIFIER	HI TECH 100-50
PRODUCT USE	Drilling Mud

Hazardous Ingredients of Materials				
Chemical Identity	Concentration	CAS#/NA#/UN#	LD(50)	LC(50)
Mineral Spirits	7-14%	CAS 64742-47-8	(Oral, Rat) Over 8 ml/kg or >6,400 mg/kg	N/E

Physical Data For Product

PHYSICAL STATE	Liquid
ODOUR AND APPEARANCE	Slight oil smell, brown appearance.
ODOUR THRESHOLD	N/E
SPECIFIC GRAVITY	0.98
VAPOUR PRESSURE	N/E
VAPOUR DENSITY (air=1)	N/E
EVAPORATION RATE	N/E
BOILING POINT	N/E
FREEZING POINT	30 Degrees C
рН	8-9
DENSITY (g/ml)	N/E
COEFFICIENT OF WATER/OIL DISTRIBUTION	N/E

Fire and Explosion Hazard of Product

CONDITIONS OF FLAMMABILITY	Requires a source of ignition, the presence of air, and a temperature greater than the flashpoint.
MEANS OF EXTINCTION	In case of fire, foam, dry chemical, or CO2. AVOID USE OF WATER-SLIPPERY CONDITIONS WILL OCCUR.
FLASHPOINT AND METHOD OF DETERMINATION	I.>200 degrees F
UPPER EXPLOSION LIMIT(% BY VOL)	N/E
LOWER EXPLOSION LIMIT(% BY VOL)	N/E
AUTO-IGNITION TEMPERATURE	N/E
FLAMMABILITY CLASSIFICATION	N/A
HAZARDOUS COMBUSTION PRODUCTS	CO, CO2, Oxides of sulphur produced on combustion.
EXPLOSION DATA	N/E
SENSITIVITY TO STATIC DISCHARGE	N/A

Material Safety Data Sheet

HI TECH 100-50

Reactivity Data

CHEMICAL STABILITY	Stable
INCOMPATIBLE MATERIALS	Oxidizing materials.
CONDITIONS OF REACTIVITY	N/A
HAZARDOUS DECOMPOSITION PRODUCTS	N/A

Toxicological Properties of Product

ROUTES OF ENTRY	
SKIN CONTACT	Contact may cause irritation, redness, swelling or dermatitis.
SKIN ABSORPTION	
EYE	Will cause painful burning or stinging of eyes and lids, watering of eyes, and
	inflammation of conjunctiva.
INHALATION	N/A
INGESTION	May cause gastrointestinal irritation, cramps, diarrhoea.
ACUTE OVER EXPOSURE EFFECTS	N/E
CHRONIC OVER EXPOSURE EFFECTS	Skin irritation or dermatitis may occur upon frequent or prolonged contact.
EXPOSURE LIMITS	N/E
IRRITANCY OF PRODUCT	Moderate skin and eye irritant.
SENSITIZATION TO MATERIAL	N/E
CARCINOGENICITY, REPRODUCTIVE EFFECTS	N/E
TERATOGENICITY, MUTAGENICITY	N/E
TOXICOLOGICALLY SYNERGISTIC PRODUCTS	N/E

Preventive Measures

PERSONAL PROTECTIVE EQUIPMENT	Wear eye/face protection. Wear suitable gloves.
SPECIFIC ENGINEERING CONTROLS	
LEAK AND SPILL PROCEDURES	CONTAIN THE SPILL. SOAK UP WITH AN ABSORBENT MATERIAL.
	CLEAN WITH AN ADEQUATE SOLVENT.
WASTE DISPOSAL	In accordance with Municipal, Provincial and Federal regulations.
HANDLING PROCEDURES AND EQUIPMENT	N/A
STORAGE REQUIREMENTS	STORE IN A TIGHTLY SEALED CONTAINER.
SPECIAL SHIPPING INFORMATION	Not Regulated TDG and IMO.

First Aid Measures

SPECIFIC FIRST AID PROCEDURES......FLUSH EYES WITH WATER. RINSE CONTAMINATED SKIN WITH SOAP AND WATER. IF INGESTED, GIVE WATER. DO NOT INDUCE VOMITING. CALL A PHYSICIAN.

Preparation Date of Material Safety Data Sheet

PREPARED BY	The Safety Committee
PHONE NUMBER OF PREPARER	
DATE PREPARED	

The information contained herein is based on data believed to be reliable, but is presented without guarantee or warranty & Control Chemical (1989) Corporation, disclaims any liability incurred from the use thereof.

Canadian Workplace Hazardous Materials Information System **Material Safety Data Sheet**

I. PRODUCT IDENTIFICATION

Product Name: HIGH TEMPERATURE SLEEVE RETAINER 36ML Item No: 64040 **Product Type:** Anaerobic

II. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight%	LD50/oral/rat	LC50/inhalation/rat	ACGIH; TLV-TWA
ETHOXYLATED BISPHENOL A DIMETHACRYLATE 24448-20-2	30-50	not available	not available	
DIMETHACRYLATE ESTER 27813-02-1	20-40	11200 mg/kg	not available	
POLYESTER RESIN MIXTURE	<10	not available	not available	
TRIALLYL ISOCYANURATE 1025-15-6	<5	1 g/kg	not available	
ACRYLIC MONOMER 20882-04-6	<5	not available	not available	
DIMETHYLBENZYL HYDROPEROXIDE 80-15-9	<3	382 mg/kg	200 ppm/4H	

III. PHYSICAL DATA

Physical State/Appearance:	Green liquid
Odour & Odour Threshold:	Sharp, irritating
Specific Gravity:	1.1
Evaporation Rate:	Not determined
Vapour Pressure:	<10 mm Hg @ 25°C
Vapour Density:	Not determined
Freezing Point:	Not determined
pH:	Does not apply
Octanol/Water Coefficient: Not determined	
Boiling Point:	>150°C/302°F

IV. FIRE AND EXPLOSIVE DATA

Recommended Extinguishing Media: Carbon dioxide, Dry chemical, Foam Oxides of carbon, Irritating organic vapours. Hazardous Combustion Products: Sensitivity to static discharge is not expected Sensitivity to Static Discharge: None anticipated. Conditions of Flammability: >95°C COC Flash Point/Range: Not determined Autoignition Temperature: Upper Explosive Limit: Not determined Lower Explosive Limit: Not determined

V. REACTIVITY DATA

Conditions Causing Chemical Instability: Materials to avoid: **Conditions of Reactivity: Hazardous Decomposition Products:**

None Strong oxidizers, free radical initiators, inert gases High temperatures. Carbon oxides

VI. HAZARDS IDENTIFICATION Eye and skin contact, ingestion, inhalation

Primary Routes of Exposure:

VI. HAZARDS IDENTIFICATION

Existing Conditions Aggravated	by Preexisting eye, skin and respiratory disorders
Exposure:	
Toxicity Information:	(See Effects of Acute Exposure to Product)
Effects of Acute Exposure:	May cause eye, skin and respiratory irritation. May cause pain, redness or swelling of the eyes and excessive blinking and tear production.
Effects of Chronic Exposure:	May cause an allergic skin reaction.
Irritancy of Product:	Irritation of eyes, skin, nose and throat. May cause dermatitis on prolonged contact in sensitive individuals.
Sensitization to Product:	(See Effects of Acute Exposure to Product)
Carcinogenicity:	(See Effects of Chronic Exposure to Product)
Reproductive Toxicity:	(See Effects of Chronic Exposure to Product)
Teratogenicity:	(See Effects of Chronic Exposure to Product)
Mutagenicity:	(See Effects of Chronic Exposure to Product)
Toxicologically Synergistic Prod	ucts: None known
WHMIS Hazard Class:	D2B TOXIC MATERIALS

VII. PREVENTATIVE MEASURES

Personal Protection			
Eyes:	Safety glasses.		
Skin:	Neoprene or nitrile gloves recommended.		
Ventilation:	General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits (or to the lowest feasible levels when limits have not been established) during the use of this product.		
Engineering Controls:	In case of insufficient ventilation, wear an organic vapor respirator		
Spill Procedures:	Maintain good ventilation. Take up with an inert absorbent. Store in a closed waste container until disposal.		
Protection of Man and Environment:			
Handling Procedures and Equipment: Store in a dry area below 35°C.			
Special Handling Information:	Avoid prolonged breathing of vapor. Keep away from eyes. Avoid prolonged contact with skin. Do not smoke while using. Wash hands after use.		

VIII. FIRST AID MEASURES

Ingestion:Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never
give anything by mouth to an unconscious person.Inhalation:Move to fresh air in case of accidental inhalation of vapours. Obtain medical attention.Skin Contact:Wash off with soap and water. If skin irritation persists, call a physician. Wash contaminated clothing
before re-use.Eye Contact:In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical
attention if irritation persists.

IX. SHIPPING INFORMATION

Canadian Transportation of Dangerous Goods Proper Shipping Name: Not regulated

Not regulated
None
None

IATA (Air)

Proper Shipping Name:	Not regulated
Class or Division:	None
UN/ID Number:	None

IMDG (Vessel)	
Proper Shipping Name:	Not regulated
Hazard Class:	None
UN Number:	None

X. PREPARATION INFORMATION

Estimated HMIS Classification: HEALTH 2, FLAMMABILILTY 1, PHYSICAL HAZARD 0 (HMIS is a registered trademark of the National Paint and Coatings Association)

Estimated NFPA Rating: HEALTH 2, FLAMMABILITY 1, REACTIVITY 0 (NFPA is a registered trademark of the National Fire Protection Association)

Prepared By: Denise Boyd, Manager-Environmental, Health & Safety

Revision Date: February 19, 2013

Company: ITW Permatex Canada. 35 Brownridge Rd. Unit 1, Halton Hills, ON L76 0C6

X. PREPARATION INFORMATION

Telephone No.: 1-800-924-6994

Revision Number: 2



MATERIAL SAFETY DATA SHEET

SECTION I: MATERIAL IDENTIFICATION

Trade Name: Ice Slicer[®] RS

Product: Complex Chloride—Sodium Chloride, Potassium Chloride, Magnesium Chloride Redmond Minerals, Inc. Distributor: EnviroTech Services, Inc. Manufacturer: *910 54th Avenue*, #230 Address: PO Box 219 Greeley, CO 80634 Redmond, UT 84652 (970) 346-3900 Telephone: (801) 423-1622 (970) 346-3959 Fax: (801) 491-2838 Date Prepared: April 21, 1995 Updated: January, 1 2010

SECTION II: HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Contains: Sodium Chloride, Potassium Chloride, Magnesium Chloride Threshold Limit Value (TLV): NA

Time Weighted Average (TWA) (OSHA):

- *1* Not subject to reporting requirements under SARA, Title III, Sec. 313.
- *2 IARC—None established.*
- *3 ACGIH*—*None established.*

SECTION III: PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point:	Solid material, NA
Vapor Pressure:	Solid material, NA
Vapor Density:	Solid material, NA
Solubility in Water:	92-99%
Specific Gravity:	See Bulk Density
Evaporation Rate:	NA
Molecular Weight:	364
Appearance and Odor:	Reddish to white, no odor.

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point:NoneFlammable Limits:NoneExtinguishing Media:None RequiredSpecial Fire Fighting Procedures:NoneUnusual Fire and Explosion Hazards:None

SECTION V: REACTIVITY DATA

Stability:	Stable
Incompatibility:	None
Hazardous Decomposition or Byproducts:	None
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid:	None established

Ice Slicer[®] RS(Cont.)

SECTION VI. HEALTH HAZARD DATA			
Routes of Entry: <i>Eye contact, skin contact, inhalation, ingestion.</i>			
Effects of Overexposure: None established			
Emergency and First Aid Procedures:			
Eyes—Flush with large quantities of	^c water.		
Skin—Wash with soap and water.			
Inhalation—Remove to fresh air.			
Ingestion—In case of significant am	ounts, induce vomiting to purge.		
SECTION VII: PRECAUTION FOR SAFE HANDLING AND USE			
Steps to be Taken in Case Material is Release	Steps to be Taken in Case Material is Released or Spilled: Sweep up.		
Waste Disposal Method: <i>Dispose in accordance with federal, state, or local regulations.</i>			
Precautions to be Taken in Handling and Storage: Store in dry area.			
Other Precautions: None			
SECTION VIII: CONTROL MEASURES			
Respiratory Protection:			
Ventilation:	None required other than normal.		
Local Exhaust:	None		
Mechanical (General): None			
Protective Gloves:	None required		
Eye Protection:	Minimum—Safety glasses		
Other Protective Equipment or Precautions: None.			

The information contained in this Material Safety Data Sheet is, to the best of our knowledge, accurate and reliable. No warranty of any kind is either expressed or implied.

This information should be provided to all individuals handling this product. Federal, state, and local regulations should be followed when handling this product.

**** MATERIAL SAFETY DATA SHEET ****

28202 ISO HEET Gas Line Antifreeze

**** SECTION 1 - CHEMICAL PRODUCT AND MANUFACTURER IDENTIFICATION **** Product Name: 28202 ISO HEET Gas Line Antifreeze Part Number: 28202 **Product CAS:** (None) Product Code: 28202 Synonyms: 28202 ISO HEET Gas Line Antifreeze MANUFACTURER IDENTIFICATION Name: Gold Eagle Company Address: 4400 S. Kildare Blvd. City: Chicago State: IL **Zip:** 60632-4372 For information call: 773-376-4400 Emergency Number: N/A Emergency Agency: INFOTRAC Agency Number: 1-800-535-5053 MSDS Effective Date: 8/5/2005 MSDS Supersedes Date: 3/1/2013 Miscellaneous: Product CAS: Mixture Chemical Name: Isopropanol Brief Description: Gas line antifreeze for automobiles. Return to top **** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

Chemical Name MAX	CAS	MIN
Isopropanol 99	67-63-0	99
Proprietary Additive	(none)	1
Miscellaneous:		
CHEMICAL NAME Isopropanol	LIMIT VALUES PEL 400 ppm PEL 980 mg/m3	

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW:

NFPA: Health: 2 Fire: 3 Reactivity: 0 Specific Hazard: None

HMIS: Health: 2 Flammability: 3 Reactivity: 0 PPE: B

Miscellaneous:

This product does not contain any components above de minimus concentrations that are considered carcinogenic by OSHA, IARC or NTP. POTENTIAL HEALTH EFFECTS Target Organs/Primary Route(s) of Entry:

Eye:

Irritant.

Skin:

Prolonged or repeated skin contact may cause dermatitis, scaling and possible systemic effects.

Ingestion:

Low level of toxicity, small amounts of liquid aspirated into the respiratory system during ingestion may cause pulmonary edema.

Inhalation:

Narcotic chemical affecting central nervous system resulting in: dizziness, nausea, visual impairment, narcosis and muscular impairment.

Miscellaneous:

Return to top

**** SECTION 4 - FIRST AID MEASURES ****

Eye:

If the product contacts the eyes, immediately wash the eyes with large quantities of room temperature water for at least 15 minutes, occasionally lifting

the lower and upper lids. Get medical attention immediately. A follow up visit to an ophthalmologist should be made. Contact lenses should not be worn when working with this chemical.

Skin:

If the product contacts the skin, promptly wash the contaminated skin with soap and water for at least 15 minutes. If this product penetrates the clothing, promptly remove the clothing and wash the skin with soap and water. Systemic effects may be delayed 18 to 72 hours, therefore keep individual under observation.

Ingestion:

If this product is ingested. DO NOT INDUCE A PERSON TO VOMIT. Get medical attention immediately.

Inhalation:

Move the exposed person to fresh air at once and call emergency medical care. If breathing has stopped, give artificial respiration. If breathing is difficult, give humidified oxygen.

Notes to Physician: No data available.

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**** SECTION 5 - FIRE FIGHTING MEASURES ****

Flash Point: 54 F. (12.2 C.) TOC

AutoIgnition Temperature: N/A

Flammable Limits Lower Limit: Explosive Limit (LEL): 2.0

Upper Limit: Explosive Limit (UEL): 12.0

Extinguishing Media:

Use halon replacement or carbon dioxide extinguishers or alcohol foam for small fires. Water spray or fog can cool fire but may not be effective in extinguishing fire. Large fires should be extinguished with alcohol foam. Use water spray to cool containers exposed to fire. Containers may explode in heat or fire.

Unusual Fire and Explosion Hazards:

Dangerous fire and explosion hazard when exposed to heat or flame. Isopropanol is extremely flammable and forms explosive mixtures with air. Isopropanol vapors may travel considerable distance to a source of ignition and flash back.

Special Fire Fighting Procedures:

Wear NIOSH approved SCBA respirator in the positive pressure mode and chemical protective clothing.

General Information:

Flammable Limits: 2.0 to 12.0

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**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

Small Spill: Remove sources of heat or ignition, provide adequate ventilation, contain leak using absorbent, inert, non-combustible material.

Large Spill: Contain spill, transfer to secure containers. In the event of an uncontrolled material release, the user should determine if release is reportable under applicable laws and regulations. Return to top

**** SECTION 7 - HANDLING AND STORAGE ****

Handling: See other sections of MSDS.

Storage: See other sections of MSDS.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

GENERAL HYGIENE CONSIDERATIONS:

Use normal hygiene practices.

OTHER PRECAUTIONS:

Product is flammable, handle accordingly.

ENGINEERING CONTROLS:

Local Exhaust: Provide local ventilation to maintain exposure levels below recommended exposure limits.

_

Mechanical (General): In confined spaces, mechanical ventilation may be required.

Special Ventilation: Review Permissible Exposure Level (PEL's).

Other Ventilation: N/A

PERSONAL PROTECTIVE EQUIPMENT

Eyes/face:

Use splash proof chemical, safety goggles or appropriate full-face respirator. Contact lenses should not be worn when working with this chemical.

Skin:

Use natural rubber or neoprene gloves as required.

Respirators:

Do not use air purifying respirator. Use NIOSH approved respirator approved supplied or self contained respirator. Respirators must be selected based on the airborne levels found in the workplace and must not exceed the working limits of the respirator.

Other Protective Clothing/Equipment:

If there is a possibility of exposure of an individual's body to the product, wear body covering work clothes to avoid prolonged or repeated exposure.

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```
Appearance/Odor:
Water white liquid, solvent odor
pH: N/A
Vapor Pressure: (MM HG): 97.0
Vapor Density(Air=1): GT 1.0
Evaporation Rate: N/A
Viscosity: N/A
Boiling Point: 180 F. (82.2 C.)
Freezing/Melting Point: N/A
Decomposition Temperature: N/A
Solubility in Water: Soluble
Specific Gravity: 0.787
Molecular Formula: N/A
Molecular Weight: N/A
VOC Coating (minus water): 0 Lbs/Gallon
Coating Density : 0 Lbs/Gallon
Solvent Density : 0 Lbs/Gallon
Percent Solvent (volume): 0
Percent Solids (volume): 0
Percent Water (volume): 0
Percent Volatile by Weight: 0
Miscellaneous:
% Volatile/Volume: 100.0
Specific Gravity (H2O = 1): N/A
Percent Solvent (Volume): N/A
Percent Solids (Volume): N/A
Percent Water (Volume): N/A
```

Product is flammable, keep away from sources of ignition, combustibles, oxidizing material and acid. Store in an area equipped with automatic sprinklers or fire extinguishing system. Empty containers contain product residues, assume empty container to have the same hazards as full containers.

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**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability: Stable: Yes

Conditions to Avoid:

Store in a well ventilated place away from sources of ignition, combustibles, oxidizing materials and acid.

Incompatibilities with Other Materials:

Strong oxidizing agents, amines, chlorinated compounds and caustic materials.

Hazardous Decomposition Products:

Excessive heating and/or incomplete combustion will produce carbon monoxide.

Hazardous Polymerization:

Hazardous Polymerization May Occur: No

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**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

No data available.

Return to top

**** SECTION 12 - ECOLOGICAL INFORMATION ****

No data available.

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**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of product in accordance with local, state, and federal regulations. Before attempting clean up, refer to other sections of MSDS for hazard warning information.

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**** SECTION 14 - TRANSPORT INFORMATION ****

Transportation Information: Shipping Information (CFR 49 and IMDG):

Proper Shipping Name: Alcohol, antifreeze DOT Hazard Class: Consumer commodity, ORM-D DOT UN Number: None required. IMDG Shipping Name: Dangerous Goods in Limited Quantities of Class 3.2 (Isopropanol), PGII

Label Information:

No data available.

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**** SECTION 15 - REGULATORY INFORMATION ****

SARA Title III:

Section 302: None Section 304: None Section 311: Hazard categories-Fire Hazard-Yes; Acute=Yes and Chronic=Yes Section 313: None

CERCLA:

Section 311(b)(4): Requires discharges of crude oil and petroleum products in any kind or form to waters must immediately be reported to the National Response Center at (800) 424-8802.

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**** SECTION 16 - ADDITIONAL INFORMATION ****

Disclaimer: Information presented herein is believed to be factual, as it has been derived from the works and opinions of persons believed to be qualified experts. However, nothing contained in this information is to be taken as warranty or representation for which the Gold Eagle Co. bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

Prepared by: Mike Profetto

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HALLIBURTON

MATERIAL SAFETY DATA SHEET

KCL POTASSIUM CHLORIDE

Product Trade Name:

Revision Date:

04-Jan-2010

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: Synonyms: Chemical Family: Application:	KCL POTASSIUM CHLORIDE None Inorganic Salt Additive
Manufacturer/Supplier	Halliburton Energy Services P.O. Box 1431 Duncan, Oklahoma 73536-0431 Emergency Telephone: (281) 575-5000
Prepared By	Chemical Compliance Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Potassium chloride	7447-40-7	60 - 100%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview

May cause eye, skin, and respiratory irritation.

4. FIRST AID MEASURES

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Skin	Wash with soap and water. Get medical attention if irritation persists.
Eyes	In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.
Ingestion	Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.
Notes to Physician	Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Flash Point/Range (C): Flash Point Method: Autoignition Temperature (F): Autoignition Temperature (C): Flammability Limits in Air - Lowe Flammability Limits in Air - Uppe		nined nined nined nined nined
Fire Extinguishing Media	All standard firefighting media.	
Special Exposure Hazards	Not applicable.	
Special Protective Equipment for Fire-Fighters	Full protective clothing and approv fire fighting personnel.	ed self-contained breathing apparatus required for
NFPA Ratings: HMIS Ratings:	Health 1, Flammability 0, Reacti Health 1, Flammability 0, Reacti	5

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures	Prevent from entering sewers, waterways, or low areas.
Procedure for Cleaning / Absorption	Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions	Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Avoid breathing vapors.	
Storage Information	Store in a cool, dry location. Product has a shelf life of 60 months.	
8. EXPOSURE CONTROLS/PERSONAL PROTECTION		
Engineering Controls	Use in a well ventilated area.	
Respiratory Protection	Dust/mist respirator. (95%)	

- Hand Protection Normal work gloves.
- Skin Protection Normal work coveralls.
- **Eye Protection** Dust proof goggles.
- Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Color: Odor: pH: Specific Gravity @ 20 C (Water=1): Density @ 20 C (Ibs./gallon): Solid White to gray Odorless 9.2 1.99 Not Determined

KCL POTASSIUM CHLORIDE Page 2 of 6

9. PHYSICAL AND CHEMICAL PROPERTIES

Bulk Density @ 20 C (lbs/ft3):	72.8
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	25.5
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	74.55

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	None known.
Hazardous Decomposition Products	None known.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation.
Skin Contact	May cause moderate skin irritation.
Eye Contact	May cause severe eye irritation.
Ingestion	Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.
Aggravated Medical Conditions	Skin disorders.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	LD50: > 5000 mg/kg (Rat)
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined

Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined Acute Crustaceans Toxicity: TLM96: 100-330 ppm (Crangon crangon)

Acute Algae Toxicity:	Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Bury in a licensed landfill according to federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT

Not restricted

Canadian TDG Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels:

None

15. REGULATORY INFORMATION

US Regulations	
US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.
Canadian Regulations	
Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS Not applicable

Additional Information	For additional information on the use of this product, contact your local Halliburton representative.
	For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.
Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

KCL POTASSIUM CHLORIDE Page 5 of 6

KCL POTASSIUM CHLORIDE Page 6 of 6

MATERIAL SAFETY DATA SHEET

DATE OF PREPARATION May 14, 2014

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER 9955

PRODUCT NAME

KRYLON® Industrial REFLECT-A-LITE[™] Spray Paint **MANUFACTURER'S NAME** THE SHERWIN-WILLIAMS COMPANY KRYLON PRODUCTS GROUP Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	(800) 247-3266	
	www.kpg-industrial.com	
Regulatory Information	(216) 566-2902	
	www.paintdocs.com	
Medical Emergency	(216) 566-2917	
Transportation Emergency*	(800) 424-9300	
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or		
	accident)	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
15	74-98-6	Propane		
		ACGIH TLV	1000 PPM	760 mm
		OSHA PEL	1000 PPM	
15	106-97-8	Butane		
		ACGIH TLV	1000 PPM	760 mm
		OSHA PEL	800 PPM	
18	108-88-3	Toluene		
		ACGIH TLV	20 PPM	22 mm
		OSHA PEL	100 ppm (Skin)	
		OSHA PEL	150 ppm (Skin) STEL	
38	67-64-1	Acetone		
		ACGIH TLV	500 PPM	180 mm
		ACGIH TLV	750 PPM STEL	
		OSHA PEL	1000 PPM	
5	763-69-9	Ethyl 3-Ethoxypropionate	1	
		ACGIH TLV	Not Available	1.11 mm
		OSHA PEL	Not Available	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

- EFFECTS OF OVEREXPOSURE
 - EYES: Irritation.
 - SKIN: Prolonged or repeated exposure may cause irritation.

INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems: • the liver

• the urinary system

• the cardiovascular system

• the reproductive system

HMIS Codes				
Health	2			
Flammability	4			
Reactivity	0			

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists. Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

UEL

12.8

- **SKIN:** Wash affected area thoroughly with soap and water.
 - Remove contaminated clothing and launder before re-use.
- INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
- **INGESTION:** Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

- LEL
- **EXTINGUISHING MEDIA** Carbon Dioxide, Dry Chemical, Foam

Propellant < 0 °F 1.0

UNUSUAL FIRE AND EXPLOSION HAZARDS

Containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY

Not Available

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep away from heat, sparks, and open flame. Vapors will accumulate readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

PROTECTIVE GLOVES

None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT SPECIFIC GRAVITY	•	721 g/l		
BOILING POINT	-	<-18 - 172 °C		
MELTING POINT				
VOLATILE VOLUME				
EVAPORATION RATE				
	ether			
VAPOR DENSITY	Heavier than air			
SOLUBILITY IN WATER	Not Available			
VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)				
Volatile Weight 53.43%	Less Water and Fe	derally Exempt Solvents		

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID None known. INCOMPATIBILITY None known. HAZARDOUS DECOMPOSITION PRODUCTS By fire: Carbon Dioxide, Carbon Monoxide HAZARDOUS POLYMERIZATION Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

CAS No.	Ingredient Name				
74-98-6	Propane				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
106-97-8	Butane				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
108-88-3	Toluene				
		LC50 RAT	4HR	4000 ppm	
		LD50 RAT		5000 mg/kg	
67-64-1	Acetone				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		5800 mg/kg	
763-69-9	Ethyl 3-Ethoxypropie	onate			
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Do not incinerate. Depressurize container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

May be classed as LTD. QTY. OR ORM-D

UN1950, AEROSOLS, 2.1, LIMITED QUANTITY, (ERG#126)

Canada (TDG)

May be classed as LTD. QTY. OR ORM-D UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, (ERG#126)

IMO

May be shipped as Limited Quantity

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, EmS F-D, S-U

IATA/ICAO

UN1950, AEROSOLS, FLAMMABLE, 2.1, LIMITED QUANTITY

SECTION 15 — REGULATORY INFORMATION

SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
108-88-3	Toluene	18	

CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

1.1. Product identifier



A Schlumberger Company

SAFETY DATA SHEET KWIK-PLUG (All Grades)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Name KWIK-PLUG (All Grades) KWIK-PLUG FINE, KWIK-PLUG MICRO, KWIK-PLUG MEDIUM, KWIK-PLUG COARSE Synonyms, Trade Names 1.2. Relevant identified uses of the substance or mixture and uses advised against Identified uses Drilling fluid additive 1.3. Details of the supplier of the safety data sheet Supplier: M-I SWACO A Schlumberger Company Endeavour Drive Arnhall Business Park, Westhill Aberdeen AB32 6UF Scotland UK T = +44 (0) 1224 - 742200F = +44 (0)1224-742288 E-mail = MBXMSDS-EH@miswaco.slb.com 1.4. Emergency telephone number

(24 Hour) Europe +44 (0) 1235 239 670, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Middle East and Africa +44 (0) 1235 239 671, Australia +61 2801 44558.

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Classification (1999/45/EEC)

Physical and Chemical Hazards	Not classified.
Human health	Not classified.
Environment	Not classified.
Not classified.	

Human Health

This product contains a small quantity of quartz, crystalline silica. IARC Monographs, Vol 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or crystobalite from occupational sources causes cancer in humans. IARC classification Group 1. Because of quantity and composition, the health hazard is small.

2.2. Label elements

Label In Accordance With (EC) No. 1272/2008 Not classified.

Supplemental Label Information (EU)

EUH210

Safety data sheet available on request.

2.3. Other hazards

Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Revision: 0

BENTONITE			60-100%
CAS-No.: 1302-78-9	EC No.: 215-108-5		
Classification (EC 1272/2008) Not classified.		Classification (67/548/EEC) Not classified.	
QUARTZ, CRYSTALLINE SILICA			2-6%
QUARTZ, CRYSTALLINE SILICA CAS-No.: 14808-60-7	EC No.: 238-878-4		2-6%

The Full Text for all R-Phrases and Hazard Statements is Displayed in Section 16

Composition Comments

The data shown is in accordance with the latest EC Directives. This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because of quantity and composition, the health hazard is small.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation.

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

Ingestion

Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Get medical attention if any discomfort continues.

Skin Contact

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye Contact

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation. Irritation of nose, throat and airway. Ingestion May cause discomfort if swallowed. Skin Contact Prolonged skin contact may cause redness and irritation. Eye Contact May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Get medical attention if any discomfort continues.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing Media

Use fire-extinguishing media appropriate for surrounding materials.

5.2. Special hazards arising from the substance or mixture

Hazardous Combustion Products

When heated, vapours/gases hazardous to health may be formed.

Unusual Fire & Explosion Hazards

High concentrations of dust may form explosive mixture with air.

5.3. Advice for firefighters

KWIK-PLUG (All Grades)

Special Fire Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

Protective Measures In Fire

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Do not allow to enter drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up

Avoid generation and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water.

6.4. Reference to other sections

Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid inhalation of dust and contact with skin and eyes. Avoid handling which leads to dust formation.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA	- 8 Hrs	STEL	- 15 Min	Notes
QUARTZ, CRYSTALLINE SILICA	WEL		0,1 mg/m3			

WEL = Workplace Exposure Limit.

8.2. Exposure controls

Protective Equipment



Engineering Measures

Provide adequate general and local exhaust ventilation.

Respiratory Equipment

No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists. Dust filter P3 (for especially fine dust/powder).

Hand Protection

For prolonged or repeated skin contact use suitable protective gloves. Use protective gloves made of: Nitrile. or Neoprene. Eye Protection

Wear approved chemical safety goggles where eye exposure is reasonably probable.

Other Protection

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Solid
Colour	Tan to Grey
Odour	Odourless

Insoluble in water 2.5 - 2.6 S.G

9.2. Other information

Not relevant.

Relative Density

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions

Not known.

10.4. Conditions to avoid

Keep away from heat, sparks and open flame.

10.5. Incompatible materials

Materials To Avoid

Not known.

10.6. Hazardous decomposition products

When heated, vapours/gases hazardous to health may be formed.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Inhalation Dust may irritate respiratory system or lungs. Ingestion. May cause discomfort if swallowed. Skin Contact Prolonged and frequent contact may cause redness and irritation. Eye Contact Particles in the eyes may cause irritation and smarting. Route of entry No route of entry noted. Target Organs No specific target organs noted.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:

Contact M-I SWACO's QHSE Department for ecological information at env@miswaco.com.

12.1. Toxicity

Acute Fish Toxicity Not considered toxic to fish.

12.2. Persistence and degradability

Degradability:

There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Bioaccumulative Potential:

No data available on bioaccumulation.

12.4. Mobility in soil

Mobility:

The product is insoluble in water.

12.5. Results of PBT and vPvB assessment

Not Classified as PBT/vPvB by current EU criteria.

12.6. Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

SECTION 14: TRANSPORT INFORMATION

General

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2 UN Proper shipping name

Not applicable.

14.3 Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Uk Regulatory References

Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health Regulations 2002 (as amended) Workplace Exposure Limits EH40.

EU Legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

15.2. Chemical Safety Assessment

International Chemical Inventories

Contact REACH@miswaco.com for REACH information. Complies with the following national/regional chemical inventory requirements: AICS, DSL / NDSL, IECSC, EINECS / ELINCS, METI ENCS, TCCL ECL, NZIOC, PICCS, TSCA,

SECTION 16: OTHER INFORMATION

General Information

HMIS Health -1 HMIS Flammability - 0 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator Information Sources

Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. LOLI. European Chemicals Bureau - ESIS (European Chemical Substances Information).

Revision Comments

This is first issue. Compiled or revised by Sandra McWilliam

Issued By	Bill Cameron
Revision Date	16-02-11
Revision	0
SDS No.	14574

KWIK-PLUG (All Grades)

Risk Phrases In Full R48/20 NC Hazard Statements In Full H373

Harmful: danger of serious damage to health by prolonged exposure through inhalation. Not classified.

May cause damage to organs << Organs >> through prolonged or repeated exposure.

Disclaimer

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

Section 1: Product & Company Identification

Product Name: Lectra Motive® Electric Parts Cleaner (aerosol)

Product Number (s): 05018

Product Use: Energized Electrical Cleaner

Manufacturer / Supplier Contact Information:

In United States: CRC Industries, Inc. 885 Louis Drive Warminster, PA 18974 <u>www.crcindustries.com</u> 1-215-674-4300(General) (800) 521-3168 (Technical) (800) 272-4620 (Customer Service) In Canada: CRC Canada Co. 2-1246 Lorimar Drive Mississauga, Ontario L5S 1R2 <u>www.crc-canada.ca</u> 1-905-670-2291 In Mexico: CRC Industries Mexico Av. Benito Juárez 4055 G Colonia Orquídea San Luís Potosí, SLP CP 78394 www.crc-mexico.com 52-444-824-1666

24-Hr Emergency - CHEMTREC: (800) 424-9300 or (703) 527-3887

Section 2: Hazards Identification

Emergency Overview

DANGER: Vapor Harmful. Contents Under Pressure. Appearance & Odor: Colorless liquid, irritating odor at high concentrations.

Potential Health Effects:

ACUTE EFFECTS:

- EYE: May cause slight temporary eye irritation. Vapors may irritate the eyes at concentrations of 100 ppm.
- SKIN: Short single exposure may cause skin irritation. Prolonged exposure may cause severe skin irritation, even a burn. A single prolonged exposure is not likely to result in the material being absorbed through the skin in harmful amounts.
- INHALATION: Dizziness may occur at concentrations of 200 ppm. Progressively higher levels may also cause nasal irritation, nausea, incoordination, and drunkenness. Very high levels or prolonged exposure could lead to unconsciousness and death.
- INGESTION: Single dose oral toxicity is considered to be extremely low. Swallowing large amounts may cause injury if aspirated into the lungs. This may be rapidly absorbed through the lungs and result in injury to other body systems.
- CHRONIC EFFECTS: Repeated contact with skin may cause drying or flaking of skin. Excessive or long term exposure to vapors may increase sensitivity to epinephrine and increase myocardial irritability.
- TARGET ORGANS: Central nervous system, possibly liver and kidney

Medical Conditions Aggravated by Exposure: None known.

See Section 11 for toxicology and carcinogenicity information on product ingredients.

Section 3: Composition/Information on Ingredients

COMPONENT	CAS NUMBER	% by Wt.
Tetrachloroethylene (PERC)	127-18-4	> 95
Carbon Dioxide	124-38-9	< 5

Section 4: First Aid Measures

Eye Contact: Immediately flush with plenty of water for 15 minutes. Call a physician if irritation persists.

Skin Contact: Remove contaminated clothing and wash affected area with soap and water. Call a physician if irritation persists. Wash contaminated clothing prior to re-use.

Inhalation: Remove person to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call a physician.

Ingestion: Do NOT induce vomiting. Call a physician immediately.

Note to Physicians: Because rapid absorption may occur through lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. If burn is present, treat as any thermal burn, after decontamination. Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary. No specific antidote.

Section 5: Fire-Fighting Measures

<u>Flammable Properties</u>: This product is nonflammable in accordance with aerosol flammability definitions. (See 16 CFR 1500.3(c)(6))

Flash Point:	None (TCC)	Upper Explosive Limit:	None
Autoignition Temperature:	None	Lower Explosive Limit:	None

Fire and Explosion Data:

Suitable Extinguishing Media: This material does not burn. Use extinguishing agent suitable for surrounding fire.

Products of Combustion: Hydrogen chloride. Trace amounts of phosgene and chlorine.

Explosion Hazards: Aerosol containers, when exposed to heat from fire, may build pressure and explode.

Protection of Fire-Fighters: Firefighters should wear self-contained, NIOSH-approved breathing apparatus for protection against suffocation and possible toxic decomposition products. Proper eye and skin protection should be provided. Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition.

Section 6: Accidental Release Measures

Personal Precautions: Use personal protection recommended in Section 8. Do not breathe vapors.

Environmental Precautions: Take precautions to prevent contamination of ground and surface waters. Do not flush into sewers or storm drains.

Methods for Containment & Clean-up: Dike area to contain spill. Ventilate the area with fresh air. If in confined space or limited air circulation area, clean-up workers should wear appropriate

respiratory protection. Recover or absorb spilled material using an absorbent designed for chemical spills. Place used absorbents into proper waste containers.

Section 7: Handling and Storage

Handling Procedures:	Vapors of this product are heavier than air and will collect in low areas. Make sure ventilation removes vapors from low areas. Do not eat, drink or smoke while using this product. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. For product use instructions, please see the product label.

Storage Procedures: Store in a cool dry area out of direct sunlight. Aerosol cans must be maintained below 120°F / 49°C to prevent cans from rupturing.

Aerosol Storage Level: I

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines:

	OS	SHA	AC	GIH	0	THER	
COMPONENT	TWA	STEL	TWA	STEL	TWA	SOURCE	UNIT
Tetrachloroethylene	100	N.E.	25	100	N.E.		ppm
Carbon dioxide	5000	30000 v	5000	30,000	N.E.		ppm
N.E. – Not Established		(c) – ceilin	g (s) –	- skin	(v) – vaca	ted	

Controls and Protection:

Engineering Controls:	Area should have ventilation to provide fresh air. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at the source, preventing dispersion into the general work area. Use mechanical means if necessary to maintain vapor levels below the exposure guidelines. If working in a confined space, follow applicable OSHA regulations.
Respiratory Protection:	None required for normal work where adequate ventilation is provided. If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with organic vapor cartridge. Air monitoring is needed to determine actual employee exposure levels. Use a self-contained breathing apparatus in confined spaces and for emergencies.
Eye/face Protection:	For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear splash-proof goggles.
Skin Protection:	Use protective gloves such as PVA, Teflon, or Viton. Also, use full protective clothing if there is prolonged or repeated contact of liquid with skin.

Section 9: Physical and Chemical Properties

Physical State:liquidColor:colorlessOdor:irritating odorOdor Threshold:50 ppmSpecific Gravity:1.619

Product Name: Lectra Motive® Electric Parts Cleaner (aerosol) Product Number (s): 05018

Initial Boiling Point:	250°F / 121°C				
Freezing Point:	ND				
Vapor Pressure:	13 mmHg @ 68°F / 20°C				
Vapor Density:	5.76 (air = 1)				
Evaporation Rate:	very fast				
Solubility: 0.015	5 g / 100 g @ 77°F / 25°C in water				
Coefficient of water/	oil distribution (log Pow): 2.88				
pH: NA					
Volatile Organic Cor	mpounds: <u>wt %</u> : 0	<u>g/L</u> :	0	<u>lbs./gal:</u>	0

Section 10: Stability and Reactivity

Stability: Stable

Conditions to Avoid: Avoid direct sunlight or ultraviolet sources. Avoid open flames, welding arcs, and other high temperature sources which induce thermal decomposition.

Incompatible Materials: Avoid contact with metals such as: aluminum powders, magnesium powders, potassium, sodium, and zinc powder. Avoid unintended contact with amines. Avoid contact with strong bases and strong oxidizers.

Hazardous Decomposition Products: Hydrogen chloride, trace amounts of chlorine and phosgene

Possibility of Hazardous Reactions: No

Section 11: Toxicological Information

Long-term toxicological studies have not been conducted for this product. The following information is available for components of this product.

Acute Toxicity:

<u>Component</u>	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Tetrachloroethylene	2629 mg/kg	3228 mg/kg	5200 mg/kg/4H
Carbon dioxide	No data	No data	470,000 ppm/30M

Chronic Toxicity:

	OSHA	IARC	NTP		
<u>Component</u>	Carcinogen	<u>Carcinogen</u>	<u>Carcinogen</u>	<u>Irritant</u>	<u>Sensitizer</u>
Tetrachloroethylene	No	Group 2A	Reasonably Anticipated to be a Carcinogen	Skin	No
Carbon dioxide	No	No	No	No	No

Reproductive Toxicity:	No information availabl	le
Teratogenicity:	No information availabl	le
Mutagenicity:	Tetrachloroethylene:	In vitro studies were negative Animal studies were negative
Synergistic Effects:	No information availabl	0

Section 12: Ecological Information

Ecological studies have not been conducted for this product. The following information is available for components of this product.

Ecotoxicity:	Tetrachloroeth	ylene 96 Hr LC50 Rainbow Trout: 5.28 mg/L (static)
		96 Hr LC50 Fathead minnow: 13.4 mg/L (flow-through)
Persistence / Deg	radability:	Biodegradation under aerobic conditions is below detectable limits. Biodegradation
		may occur under anaerobic conditions. Biodegradation rate may increase in soil
		and/or water with acclimation.
Bioaccumulation /	Accumulation:	Bioconcentration potential is low (BCF less than 100).
Mobility in Environ	ment:	Potential for mobility in soil is medium.
		Bioconcentration potential is low (BCF less than 100).

Section 13: Disposal Considerations

<u>Waste Classification</u>: The dispensed liquid product is a RCRA hazardous waste for toxicity with the following potential waste codes: U210, F001, F002, D039. (See 40 CFR Part 261.20 – 261.33) Empty aerosol containers may be recycled. Any liquid product should be managed as a hazardous waste.

All disposal activities must comply with federal, state, provincial and local regulations. Local regulations may be more stringent than state, provincial or national requirements.

Section 14: Transport Information

US DOT (ground):	UN1950, Aerosols, non-flammable, 2.2 (6.1), Limited Quantity**
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ICAO/IATA (air): UN1950, Aerosols, non-flammable, containing substances in Division 6.1, Packing Group III, 2.2 (6.1), Limited Quantity

IMO/IMDG (water): UN1950, Aerosols, 2.2 (6.1)

Special Provisions: Marine Pollutant **This product can be classified and labeled as 'Consumer Commodity, ORM-D' for domestic ground shipping until January 1, 2014. If shipping as limited quantity by ground, note that shipping papers are not required.

Section 15: Regulatory Information

U.S. Federal Regulations:

Toxic Substances Control Act (TSCA):

All ingredients are either listed on the TSCA inventory or are exempt.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):

Reportable Quantities (RQ's) exist for the following ingredients: Tetrachloroethylene (100 lbs)

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Superfund Amendments Reauthorization Act (SARA) Title III: Section 302 Extremely Hazardous Substances (EHS): None

Section 311/312 Hazard Categories:	Fire Hazard	No
_	Reactive Hazard	No
	Release of Pressure	Yes
	Acute Health Hazard	Yes
	Chronic Health Hazard	Yes

Section 313 Toxic Chemicals:	This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of
	1986 and 40 CFR Part 372: tetrachloroethylene (98%)

Clean Air Act:

Section 112 Hazardous Air Pollutants (HAPs): tetrachloroethylene

Occupational Safety and Health Administration:

This product is regulated by the Hazard Communications Standard.

U.S. State Regulations:

California Safe Drinking Water and Toxic Enforcement Act (Prop 65): This product may contain the following chemicals known to the state of California to cause cancer, birth defects or other reproductive harm:

tetrachloroethylene

Consumer Products VOC Regulations:

For users in California, Connecticut, Delaware, District of Columbia, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, Rhode Island and Virginia, this product is an Energized Electrical Cleaner. Energized equipment use only. Not to be used for motorized vehicle maintenance or their parts.

State Right to Know:

New Jersey:	127-18-4, 124-38-9
Pennsylvania:	127-18-4, 124-38-9
Massachusetts:	127-18-4, 124-38-9
Rhode Island :	127-18-4, 124-38-9

Canadian Regulations:

Controlled Products Regulations:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Hazard Class: A, D1B, D2A, D2B

<u>Canadian DSL Inventory</u>: All ingredients are either listed on the DSL Inventory or are exempt.

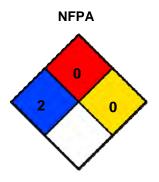
European Union Regulations:

<u>RoHS Compliance</u>: This product is compliant with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003. This product does not contain any of the restricted substances as listed in Article 4(1) of the RoHS Directive.

Additional Regulatory Information: None

Section 16: Other Information

HMIS® (II)			
Health:	2		
Flammability:	0		
Reactivity:	0		
PPE:	В		



Ratings range from 0 (no hazard) to 4 (severe hazard)

Prepared By:Michelle RudnickCRC #:491GRevision Date:07/24/2012

Changes since last revision: Section 14: transport information Section 15: Consumer Products VOC Regulations

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this MSDS consult your supervisor, a health & safety professional, or CRC Industries.

- ACGIH: American Conference of Governmental Industrial Hygienists
- CAS: Chemical Abstract Service
- CFR: Code of Federal Regulations
- DOT: Department of Transportation
- DSL: Domestic Substance List
- g/L: grams per Liter
- HMIS: Hazardous Materials Identification System
- IARC: International Agency for Research on Cancer
- IATA: International Air Transport Association
- ICAO: International Civil Aviation Organization
- IMDG: International Maritime Dangerous Goods
- IMO: International Maritime Organization
- lbs./gal: pounds per gallon
- LC: Lethal Concentration
- LD: Lethal Dose

NA: Not Applicable ND: Not Determined NIOSH: National Institute of Occupational Safety & Health NFPA: National Fire Protection Association NTP: National Toxicology Program OSHA: Occupational Safety and Health Administration PMCC: Pensky-Martens Closed Cup PPE: **Personal Protection Equipment** ppm: Parts per Million Restriction of Hazardous Substances RoHS: STEL: Short Term Exposure Limit TCC: Tag Closed Cup TWA: Time Weighted Average WHMIS: Workplace Hazardous Materials Information System



MSDS NO. 12028 T	rade Name: LIQUID PAC		Revision Date: 07/07/2004
1. CHEMI	CAL PRODUCT AND	COMPANY IDENTIF	ICATION
Trade Name: Chemical Family: Product Use: Emergency Telephone (24 hr.)	LIQUID PAC Mixture Oil well drilling fluid addit : 281-561-1600	ive.	
Supplied by:	M-I HDD MINING & WAT A Business Unit of M-I L. P.O. Box 42842 Houston, TX 77242 www.drilling-fluids.com		
Telephone Number: Contact Person:	281-561-1511 Catherine Miller, Product	Safety Specialist	
Revision Number:	4		
HMIS Rating Health: 1	Flammability: 2	Physical Hazard: 0	PPE: J

HMIS Key: 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Petroleum distillates,	64742-47-8	55	No comments.
hydrotreated light			
Carbohydrate		45	No comments.

3. HAZARDS IDENTIFICATION

Emergency Overview:	Caution! Combustible liquid and vapor. May cause eye, skin, and respiratory tract irritation. Vapors or mists may cause central nervous system (CNS) effects if inhaled.			
Canadian Classification: UN PIN No: Not regulated		WHMIS Class:	B3 D2B	
Physical Liquid State:	Odor:	Mild (or faint)	Color:	Off-white
Potential Health Effects:				
Acute Effects				
Eye Contact:	May irritate eyes	5.		

MSDS NO . 12028	Trade Name: LIQUID PAC Revision Date: 07/07/2004 Page 2	/6
Skin Contact:	May be irritating to the skin. Prolonged or repeated contact may cause defatting of the skin and/or dermatitis (inflamation).	
Inhalation:	Vapors or mists may be irritating to the respiratory tract. May cause central nervous system (CNS) effects.	
Ingestion:	May cause gastric distress, nausea and vomiting if ingested. Aspiration can be a hazard if this material is swallowed.	
Carcinogenicity & Chronic Effects:	See Section 11 - Toxicological Information.	
Routes of Exposure:	Eyes. Dermal (skin) contact. Inhalation.	
Target Organs/Medical Conditions Aggravated by Overexposure:	Eyes. Skin. Respiratory System. Central Nervous System (CNS).	

	4. FIRST AID MEASURES
Eye Contact:	Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Do not induce vomiting. Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. Get immediate medical attention.
General Notes:	Persons seeking medical attention should carry a copy of this MSDS with them.
Notes To Physician:	Aspiration may cause severe lung damage. Evacuate stomach in a way which avoids aspiration.

5. FIRE FIGHTING MEASURES

Flammable	Properties

Flash Point: F (C):185F (85C)Flash Point Method:TCC

 Flammable Limits in Air - Lower (%): ND

 Flammable Limits in Air - Upper (%): ND

 Autoignition Temperature: F(C)
 ND

 Flammability Class:
 IIIA

 Other Flammable Properties:
 ND

 Extinguishing Media:
 Water fog, carbon dioxide, foam, dry chemical.

Protection Of Fire-Fighters:

Special Fire-Fighting Procedures: Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways. Note that flammable vapors may form an ignitable mixture with air. Vapors may travel considerable distances and flash back if ignited.

Hazardous Combustion Products: Oxides of: Carbon.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Use personal protective equipment identified in Section 8.

	MATERIAL SAFETT DATA SHEET	
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Spill Procedures:	Evacuate surrounding area, if necessary. Keep personnel rem spill. Extinguish all ignition sources. Avoid sparks, flames, hea off leak if it can be done safely. Contain spilled material. Abso sand or earth. Place into containers for disposal. Use non-sp proof means to transfer material to containers. Note that flamm vapors may form an ignitable mixture with air. Vapors may trav distances from spill and flash back, if ignited.	noved and upwind of at and smoking. Shut orb in vermiculite, dry parking or explosion mable/combustible
Environmental Precautions:	Do not allow to enter sewer or surface and subsurface waters. disposed of in accordance with federal, state and local laws. In with reportable quanitity (RQ) components - if the RQ is excee Spill Response Office at 1 800 424 8802.	n the U.S., for products
	7. HANDLING AND STORAGE	

MATEDIAL CALETY DATA CULET

Handling:

Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid breathing vapors or spray mists. Use only in a well ventilated area. Ground and bond containers when transferring material. Wash thoroughly after handling.

Storage:

Store in dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Petroleum distillates,	64742-47-8	55	NA	NA	NA	(3) Oil mist.
hydrotreated light						
Carbohydrate		45	NA	NA	NA	(1)

Notes

(3) For Oil mist, mineral: ACGIH TLV 5 mg/m³, STEL 10 mg/m³; OSHA PEL 5 mg/m³

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable).

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

Personal Protection Equipment

Eye/Face Protection: Skin Protection:	Wear chemical safety goggles. Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as nitrile or neoprene.
Respiratory Protection:	If exposed to particulates/aerosols: Use at least a NIOSH-approved N95 half-mask disposable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator. If exposed to organic vapors: Use a NIOSH/MSHA-approved organic vapor respirator. CCROV: CCR with organic vapor cartridge. A NIOSH/MSHA approved respirator with ammonia/methylamine cartridges should be used to protect against ammonia or amine inhalation exposure. Refer to Exposure Limits table (Section 8) for component specific respiratory protection recommendations.

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General Hygiene Considerations: Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Off-white
Odor:	Mild (or faint)
Physical State:	Liquid
pH:	ND
Specific Gravity (H2O = 1):	0.97 at 68F (20C)
Solubility (Water):	Soluble.
Flash Point: F (C):	185F (85C)
Melting/Freezing Point:	-45 F (-42C)
Boiling Point:	424 - 460F (217 - 237C)
Pour Point:	-35F (-37C)
Vapor Pressure:	ND
Vapor Density (Air=1):	>3
Evaporation Rate:	<1
Odor Threshold(s):	ND

	10. STABILITY AND REACTIVITY
Chemical Stability:	Stable
Conditions to Avoid: Materials to Avoid:	Keep away from heat, sparks and flame. Oxidizers.
Hazardous Decomposition Products:	For thermal decomposition products, see Section 5.
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

Component Toxicological Data: Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	CAS No.	Acute Data
Petroleum distillates, hydrotreated	64742-47-8	Oral LD50: >39.9 g/kg (rat); Dermal LD50: 2.0 - 4.0 g/kg
light		(rabbit); Inhalation LC50: >24.1 mg/l/1H (rat)
Carbohydrate		Oral LD50: 27000 mg/kg (rat); Dermal LD50: >2000 mg/kg
		(rabbit); LC50: >5800 mg/m³/4H (rat)

Ingredient	Component Toxicological Summary
Carbohydrate	Rats fed diets containing 2.5, 5 and 10% of this component for 3 months demonstrated some kidney effects. Effects were believed to be related to high sodium content of diet. (Food Chem.
	Toxicol.)

Product Toxicological Information:

No toxicological data is available for this product.

12. ECOLOGICAL INFORMATION

Trade Name: LIQUID PAC			
MSDS NO. 12028	Revision I	Date: 07/07/2004	Page 5/6
Ingredient	CAS No.	Data	
Petroleum distillates, hydrotreated light	64742-47-8	LC50 48H static: 7500 ug/l (Danio rerio (zebra 4D static: 5900 ug/l (lepomis macrochirus (blue 24H static: 3200 ug/l (Oncorhynchus mykiss (r trout)); LC50 48H static: 8800 ug/l (Poecilia ret (guppy))	egill)); LC50 ainbow
Product Ecotoxicity Data:	Contact M-I Environn	nental Affairs Department for available product eco	otoxicity data.
Biodegration: Bioaccumulation: Octanol/Water Partition Coefficient:	ND ND ND		
	13. DISPOSAL	CONSIDERATIONS	
Waste Classification:	ND		
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.		
Disposal Method:	dispose of in a permi	or recycle, if practical. Should this product becom tted industrial landfill. Ensure that the containers a or to disposal in a permitted industrial landfill.	

14. TRANSPORT INFORMATION

U.S. DOT Shipping Description:	Not regulated under TDG, IMDG, ICAO/IATA. Not regulated for U.S. ground transport in non-bulk containers (<119 gallons). When shipped in U.S. in bulk containers, Combustible liquid, n.o.s., (contains petroleum distillates), NA1993, PG III
Packaging Authorizations: Emergency Response Guide No.:	49 CFR 173.150, 173.203, 173.241 128
Canada TDG Shipping Description: UN PIN No:	Not regulated Not regulated
IMDG Shipping Description:	Not regulated
ICAO/IATA Shipping Description:	Not regulated

15. REGULATORY INFORMATION

U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Fire hazard. Immediate (acute) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

International Chemical Inventories

Trade Name: LIQUID PAC

Revision Date: 07/07/2004

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Australia AICS - Components are listed or exempt from listing. Canada DSL - Components are listed or exempt from listing. China Inventory - Components are listed or exempt from listing. European Union EINECS - Components are listed or exempt from listing. Japan METI ENCS - Components are listed or exempt from listing. Korea TCCL ECL - Components are listed or exempt from listing. Philippine PICCS - Components are listed or exempt from listing. U.S. TSCA - Components are listed or exempt from listing. U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: B3 D2B

16. OTHER INFORMATION

The following sections have been revised: 1, 3, 9, 15,

NA - Not Applicable, ND - Not Determined.

Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

LUBRIPLATE Lubricants Co. 129 Lockwood St. Newark, NJ 07105 Emergency Telephone Number: 1-800-255-3924-CHEM-TEL (24 hour) Telephone Number for information: 1-973-589-9150

SUBSTANCE: LUBRIPLATE® Air Tool Lubricant

TRADE NAMES/SYNONYMS:

PRODUCT USE: Petroleum lubricating oil

CREATION DATE: 02/13/2008 **REVISION DATE:** 07/22/2011

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT: Hydrotreated naphthenic distillates CAS NUMBER: 64742-52-5/64742-53-6 EC NUMBER (EINECS): 265-155-0/265-156-6 PERCENTAGE: 90-95

COMPONENT: Soy methyl ester CAS NUMBER: 67784-80-9 EC NUMBER (EINECS): 267-055-2 PERCENTAGE: 2-5

COMPONENT: Proprietary additive package CAS NUMBER: NA EC NUMBER (EINECS): NA PERCENTAGE: 0-2

NOTE: The IP 346 value of the mineral oil is less than 3%

SECTION 3 HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS: INHALATION: SHORT TERM EXPOSURE: Irritation LONG TERM EXPOSURE: Lung damage SKIN CONTACT: SHORT TERM EXPOSURE: Irritation LONG TERM EXPOSURE: Irritation, skin disorders MSDS No. - 0892150713054

EYE CONTACT: SHORT TERM EXPOSURE: Irritation LONG TERM EXPOSURE: No information available INGESTION: SHORT TERM EXPOSURE: Diarrhea, difficulty breathing LONG TERM EXPOSURE: no information on significant adverse effects

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM (HMIS): Health – 1 Flammability – 1 Reactivity – 0

Not a Controlled Product under (WHMIS) - Canada

Special Protection: See Section 8

SECTION 4 FIRST AID MEASURES

INHALATION: Remove to fresh air. See a physician if irritation persists.

SKIN CONTACT: Remove any contaminated clothing and wash with soap and warm water.

EYE CONTACT: Flush with clear water for 15 minutes or until irritation subsides. If irritation persists, consult a physician.

INGESTION: If ingested, call a physician immediately. Do not induce vomiting.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Slight fire hazard

EXTINGUISHING MEDIA: Foam, Dry Chemical, Carbon Dioxide or Water Spray (Fog)

SPECIAL FIRE FIGHTING PROCEDURES: Cool exposed containers with water. Use air-supplied breathing equipment for enclosed or confined spaces.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Do not store or mix with strong oxidants. Empty containers retain residue. Do not cut, drill, grind, or weld, as they may explode.

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE: Recover liquid, wash remainder with suitable petroleum solvent or add absorbent. Keep petroleum products out of sewers and water courses. Advise authorities if product has entered or may enter sewers and water courses.

SECTION 7 HANDLING AND STORAGE

STORAGE: Store at temperatures below 100°F. Store in a cool, dry area in tightly closed containers. Use adequate ventilation. Avoid excessive heat, sparks, or open flames. Avoid prolonged or repeated skin contact.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS: OIL MIST IN AIR (Not Encountered in Normal Usage): 5 mg/m³ UK OES TWA 10mg/m³ UK OES STEL

VENTILATION: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant (nitrile) gloves.

RESPIRATOR: Consider the need for appropriate protective equipment, such as self-contained breathing apparatus, adequate masks and filters.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid **APPEARANCE:** transparent **COLOUR:** amber PHYSICAL FORM: oil **ODOR:** mineral oil odor **BOILING POINT:** >288 C FREEZING POINT: Not available FLASH POINT: 196 C (COC) LOWER FLAMMABLE LIMIT: 0.9% by volume **UPPER FLAMMABLE LIMIT:** 7.0% by volume **AUTO IGNITION:** not available **VAPOUR PRESSURE:** <5 mm Hg **VAPOR DENSITY** (air=1): >5 SPECIFIC GRAVITY (water=1): 0.88 **DENSITY:** not available WATER SOLUBILITY: negligible **pH:** not available **VOLATILITY:** not available **ODOR THRESHOLD:** not available

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressures

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

INCOMPATIBLES: Oxidising materials, chlorine

HAZARDOUS DECOMPOSITION:

Thermal decomposition products or combustion: oxides of carbon, oxides of sulphur

POLYMERISATION: Will not polymerise.

SECTION 11 TOXICOLOGICAL INFORMATION

Hydrotreated naphthenic distillates: TOXICITY DATA: Greater than 5 g/kg oral-rat LD50

Soy methyl ester: TOXICITY DATA: No data available

Proprietary additive package: TOXICITY DATA: No data available

SECTION 12 ECOLOGICAL INFORMATION

Not available

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations

SECTION 14 TRANSPORT INFORMATION

LAND TRANSPORT ADR: No classification assigned.

LAND TRANSPORT RID: No classification assigned.

AIR TRANSPORT IATA: No classification assigned.

AIR TRANSPORT ICAO: No classification assigned.

MARITIME TRANSPORT IMDG: No classification assigned.

SECTION 15 REGULATORY INFORMATION

EUROPEAN REGULATIONS: EC CLASSIFICATION (CALCULATED): Not classified as dangerous.

SARA/TITLE III, Section 313 Status – Zinc compounds <1%

SECTION 16 OTHER INFORMATION

The above information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of LUBRIPLATE Lubricants Company. The data on these sheets relates only to the specific material designated herein. LUBRIPLATE Lubricants Company assumes no legal responsibility for use or reliance upon this data.

SAFETY DATA SHEET

Lucas Heavy Duty Oil Stabilizer



Section 1. Identification

GHS product identifier	Lucas Heavy Duty Oil Stabilizer	
Other means of identification	: Not available.	
Product number	: 10001, 10002, 10015, 10085, 10091	

Relevant identified uses of the substance or mixture and uses advised against

Oil additives.

Supplier's details	: Lucas Oil Products, Inc 302 North Sheridan Street Corona, California 92880-2067 Toll Free: (800) 342-2512 Tel: (951) 270-0154 Fax: (951) 270-1902 Website: www.LucasOil.com

Emergency telephone	: (951) 493-1149
number (with hours of	(951) 847-5949
operation)	Markn@lucasoil.com

7:00A.M. to 5:00P.M. Monday thru Friday

Section 2. Hazards identification

OSHA/HCS status	: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Classification of the substance or mixture	: Not classified.
GHS label elements	
Signal word	: No signal word.
Hazard statements	: No known significant effects or critical hazards.
Precautionary statements	
General	: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
Prevention	: Not applicable.
Response	: Not applicable.
Storage	: Not applicable.
Disposal	: Not applicable.
Hazards not otherwise classified	: None known.





Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Not available.

CAS number/other identifiers

CAS number	: Not applicable.
Product code	: Not available.

Ingredient name	%	CAS number
Lubricating oils, petroleum, c>25, hydrotreated bright stock-based	60 - 100	72623-83-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	 Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	 Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health e	effects
Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.
<u>Over-exposure signs/sy</u>	<u>/mptoms</u>
Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.
Indication of immediate	medical attention and special treatment needed, if necessary
Notes to physician	: Treat symptomatically. Contact poison treatment specialist immediate

Notes to physician	 Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)





Section 5. Fire-fighting measures

Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Special protective actions for fire-fighters	: No special precaution is required.
Hazardous thermal decomposition products	: No specific data.
Specific hazards arising from the chemical	: No specific fire or explosion hazard.
Unsuitable extinguishing media	: None known.
Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.
Extinguishing media	

Section 6. Accidental release measures

Personal precautions, protect	ctive equipment and emergency procedures
For non-emergency personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
For emergency responders	: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods and materials for co	ontainment and cleaning up
Small spill	: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	: Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

recountering for sure numarity	
Protective measures	: Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.





Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities
 Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits	
Lubricating oils, petroleum, c>25, hydrotreated bright stock-based	ACGIH TLV (United States, 3/2012). TWA: 5 mg/m ³ 8 hours. Form: Inhalable fraction NIOSH REL (United States, 6/2009). TWA: 5 mg/m ³ 10 hours. Form: Mist STEL: 10 mg/m ³ 15 minutes. Form: Mist OSHA PEL (United States, 6/2010). TWA: 5 mg/m ³ 8 hours.	

Appropriate engineering controls	:	No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
Environmental exposure controls	:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Individual protection measu	<u>ires</u>	
Hygiene measures	:	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
Skin protection		
Hand protection	-	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Body protection	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	:	Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.





Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid. [Clear.]
Color	: Amber.
Odor	: Petroleum.
Odor threshold	: Not available.
рН	: Not available.
Melting point	: Not available.
Boiling point	: >260°C (>500°F)
Flash point	: Closed cup: 218.33°C (425°F)
Burning time	: Not applicable.
Burning rate	: Not applicable.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 0.8958
Solubility	: Negligible at 25°C
Solubility in water	: Not available.
Partition coefficient: n- octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: Kinematic (100°C (212°F)): 1.1 cm²/s (110 cSt)

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological	<u>effects</u>
Acute toxicity	
There is no data available.	
Irritation/Corrosion	
Skin	: There is no data available.



Section 11. Toxicological information

	-	
Eyes	: There is no data available.	
Respiratory	: There is no data available.	
Sensitization		
Skin	: There is no data available.	
Respiratory	: There is no data available.	
<u>Mutagenicity</u>		
There is no data available.		
Carcinogenicity		
There is no data available.		
Reproductive toxicity		
There is no data available.		
Teratogenicity		
There is no data available.		
Specific target organ toxicity (single exposure)		
There is no data available.		

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

Name	Result
Lubricating oils, petroleum, c>25, hydrotreated bright stock-based	ASPIRATION HAZARD - Category 1

Information on the likely	: Not available.
routes of exposure	

Potential acute health effects				
Eye contact	: No known significant effects or critical hazards.			
Inhalation	: No known significant effects or critical hazards.			
Skin contact	: No known significant effects or critical hazards.			
Ingestion	: No known significant effects or critical hazards.			
Symptoms related to the physical, chemical and toxicological characteristics				
Eye contact	: No known significant effects or critical hazards.			
Inhalation	: No known significant effects or critical hazards.			
Skin contact	: No known significant effects or critical hazards.			
Ingestion	: No known significant effects or critical hazards.			
Delayed and immediate effects and also chronic effects from short and long term exposure Short term exposure				
Potential immediate effects	: No known significant effects or critical hazards.			
Potential delayed effects	: No known significant effects or critical hazards.			
Long term exposure				
Potential immediate effects	: No known significant effects or critical hazards.			
Potential delayed effects	: No known significant effects or critical hazards.			
Potential chronic health effects				
Comorol				
General	: No known significant effects or critical hazards.			

Carcinogenicity : No known significant effects or critical hazards.





Lucas Heavy Duty Oil Stabilizer

Section 11. Toxicological information

Teratogenicity Developmental effects Fertility effects

- : No known significant effects or critical hazards.
- : No known significant effects or critical hazards.
- : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Bioaccumulative potential

There is no data available.

Mobility in soil

coefficient (Koc)

Other adverse effects : No known significant effects or critical hazards.

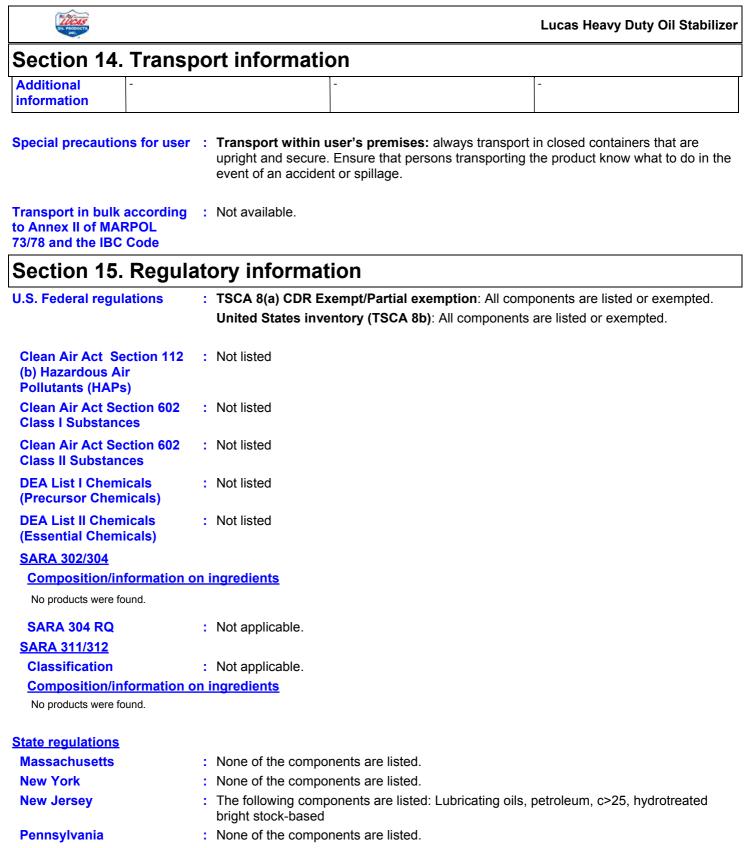
Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	ΙΑΤΑ
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.





California Prop. 65 No products were found. International regulations

Lucas Heavy Duty Oil Stabilizer



_	-
International lists	 Australia inventory (AICS): All components are listed or exempted. China inventory (IECSC): All components are listed or exempted. Japan inventory: Not determined. Korea inventory: All components are listed or exempted. Malaysia Inventory (EHS Register): Not determined. New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted. Philippines inventory (PICCS): All components are listed or exempted. Taiwan inventory (CSNN): Not determined.
Chemical Weapons Convention List Schedule I Chemicals	: Not listed
Chemical Weapons Convention List Schedule II Chemicals	: Not listed
Chemical Weapons Convention List Schedule III Chemicals	: Not listed

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health: 0 * Flammability: 1 Physical hazards: 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health: 0 Flammability: 1 Instability: 0

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

<u>Instory</u>		
Date of issue mm/dd/yyyy	:	12/30/2012
Version	:	1
Revised Section(s)	:	Not applicable.
Prepared by	1	KMK Regulatory Services Inc.
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = International Air Transport Association IBC = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Revision Date: 08/16/2012 Print Date: 8/25/2012 MSDS Number: R0340955 Version: 5.0

NAPA® MAC'S PREMIUM STARTING FLUID 636515

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Ashland P.O. Box 2219 Columbus, OH 43216	Regulatory Information Number Telephone Emergency telephone number	1-800-325-3751 614-790-3333 1-800-ASHLAND (1-800-274- 5263)
Product name	NAPA® MAC'S PREMIUM STAR	TING FLUID
Product code	636515	

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: aerosol, colourless

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CONTENTS UNDER PRESSURE. MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY THE SKIN AND CAUSE IRRITATION AND BURNS.

Potential Health Effects

Exposure routes

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

Eye contact

Can cause severe eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure eye tissue.

Skin contact

May cause slight skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, skin burns, and other skin damage.

Ingestion

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NAPA® MAC'S PREMIUM STARTING FLUID 636515

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing aerosol and/or mist is possible when material is sprayed. Aerosol and mist may present a greater risk of injury because more material may be present in the air than from vapor alone. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material:, Skin, lung (for example, asthma-like conditions), Liver, Central nervous system, male reproductive system, Individuals with preexisting heart disorders maybe more susceptible to arrhythmias (irregular heartbeats) if exposed to high concentrations of this material.

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), Cough, central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), loss of appetite, respiratory depression (slowing of the breathing rate), Lack of coordination, confusion, irregular heartbeat, respiratory failure, coma

Target Organs

This product contains ethanol. Alcoholic beverage consumption has been associated with brain damage, heart damage, and pancreatitis in humans. The relevance of these findings to ethanol exposure in industrial environments is uncertain., Exposure to this material (or a component) has been found to cause kidney damage in male rats. The mechanism by which this toxicity occurs is specific to the male rat and the kidney effects are not expected to occur in humans., Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:, pancreatic damage, liver damage, brain damage, testis damage, Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans:, liver damage

Carcinogenicity

Ethyl chloride has been shown to cause cancer in laboratory animals. The relevance of this finding to humans is uncertain. This product contains ethanol. The International Agency for Research on Cancer (IARC) has determined that exposure to ethanol through chronic human consumption of alcoholic beverages can cause cancer. The relevance of this finding to ethanol exposure in industrial environments is uncertain.

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Reproductive hazard

This product contains ethanol. Alcoholic beverage consumption has been associated with birth defects in humans. The relevance of this finding to ethanol exposure in industrial environments is uncertain.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components	CAS-No. / Trade Secret No.	Concentration
SOLVENT NAPHTHA (PETROLEUM), LIGHT	64742-89-8	>=60-<70%
ALIPHATIC		
ETHYL ETHER	60-29-7	>=20-<30%
CARBON DIOXIDE	124-38-9	>=1.5-<5%
ETHANOL	64-17-5	>=1.5-<5%
DISTILLATES (PETROLEUM),	64742-53-6	>=0.5-<1%
HYDROTREATED LIGHT NAPHTHENIC		
ETHYL CHLORIDE	75-00-3	>=0.1-<0.5%

4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

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If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Notes to physician

Hazards: Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material. This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity (See Section 2 - Swallowing) when deciding whether to induce vomiting. Acute aspiration of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Repeated aspiration of small quantities of mineral oil can produce chronic inflammation of the lungs (i.e. lipoid pneumonia) that may progress to pulmonary fibrosis. Symptoms are often subtle and radiological changes appear worse than clinical abnormalities. Occasionally, persistent cough, irritation of the upper respiratory tract, shortness of breath with exertion, fever, and bloody sputum occur. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

Treatment: Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Water spray, Carbon dioxide (CO2), Foam, Dry chemical

Hazardous combustion products

Aldehydes, carbon dioxide and carbon monoxide, formaldehyde-like, Hydrocarbons, organic compounds

Precautions for fire-fighting

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

NFPA Flammable and Combustible Liquids Classification

not applicable

6. ACCIDENTAL RELEASE MEASURES

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Personal precautions

For personal protection see section 8. Eliminate all sources of ignition such as flares, flames (including pilot lights), and electrical sparks. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions

Do not flush into surface water or sanitary sewer system.

Methods for cleaning up

Suppress (knock down) gases/vapours/mists with a water spray jet. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Other information

Comply with all applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage

Do not store near extreme heat, open flame, or sources of ignition. Maximum recommended storage temperature 50 degrees C (122 degrees F). Store in a cool, dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

SOLVENT NAPHTHA (ALIPHATIC	(PETROLEUM), LIGHT	64742-89-8	
OSHA Z1	time weighted average	500 ppm	
ACGIH	time weighted average	300 ppm	
OSHA Z1	time weighted average	2,000 mg/m3	
ACGIH	time weighted average	1,370 mg/m3	
ETHYL ETHER		60-29-7	

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ACGIH	time weighted average	400 ppm
ACGIH	Short term exposure limit	500 ppm
OSHA Z1	Permissible exposure limit	400 ppm
OSHA Z1	Permissible exposure limit	1,200 mg/m3
CARBON DIOXIDE	•	124-38-9
ACGIH	time weighted average	5,000 ppm
ACGIH	Short term exposure limit	30,000 ppm
NIOSH	Recommended exposure	5,000 ppm
	limit (REL):	
NIOSH	Recommended exposure	9,000 mg/m3
	limit (REL):	
NIOSH	Short term exposure limit	30,000 ppm
NIOSH	Short term exposure limit	54,000 mg/m3
OSHA Z1	Permissible exposure limit	5,000 ppm
OSHA Z1	Permissible exposure limit	9,000 mg/m3
ETHANOL		64-17-5
NIOSH	Recommended exposure	1,000 ppm
	limit (REL):	
NIOSH	Recommended exposure	1,900 mg/m3
	limit (REL):	
OSHA Z1	Permissible exposure limit	1,000 ppm
OSHA Z1	Permissible exposure limit	1,900 mg/m3
ACGIH	Short term exposure limit	1,000 ppm

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye protection

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist. Maintain eye wash station near work area.

Skin and body protection

Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.

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NAPA® MAC'S PREMIUM STARTING FLUID 636515

Wear resistant gloves (consult your safety equipment supplier).

Respiratory protection

Respiratory protection is not required under normal conditions of use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	aerosol
Colour	colourless
Odour	ether-like
Boiling point/boiling range	94.3 °F / 34.6 °C @ 1,013.23 hPa Calculated
	Phase Transition Liquid/Gas
Flash point	-49 °F / -45 °C
	Calculated Flash Point
Lower explosion limit/Upper explosion limit	1.05 %(V) / 36.5 %(V)
Vapour pressure	717.261 hPa @ 77 °F / 25 °C Calculated Vapor
	Pressure
Density	0.706 g/cm3 @ 60.01 °F / 15.56 °C

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Heat, flames and sparks.

Incompatible products

Acids, Alkali metals, Ammonia, Bases, halogens, Oxidizing agents, sodium, Sulphur compounds

Hazardous decomposition products

Aldehydes, carbon dioxide and carbon monoxide, formaldehyde-like, Hydrocarbons, organic compounds

Hazardous reactions

Product will not undergo hazardous polymerization.



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NAPA® MAC'S PREMIUM STARTING FLUID 636515

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	
Acute oral toxicity -	: no data available
Product	

Acute oral toxicity - Compo	onents
SOLVENT NAPHTHA	: LD 50: > 8,000 mg/kg Species: Rat
(PETROLEUM), LIGHT	
ALIPHATIC	
ETHYL ETHER	: LD 50: 3,230 - 3,920 mg/kg Species: Rat
ETHANOL	: LD 50: 7,060 mg/kg Species: Rat
DISTILLATES	: LD 50: > 5 g/kg Species: Rat
(PETROLEUM),	
HYDROTREATED	
LIGHT NAPHTHENIC	

Acute inhalation toxicity	
Acute inhalation toxicity -	: no data available
Product	

Acute inhalation toxicity -	Components
SOLVENT NAPHTHA	: LC 50: 3400 ppm Exposure time: 4 h Species: Rat
(PETROLEUM), LIGHT	
ALIPHATIC	
ETHYL ETHER	: LC 50: 32,000 mg/l Exposure time: 4 h Species: Rat
ETHANOL	: LC 50: 117 - 125 mg/l Exposure time: 4 h Species: Rat
ETHYL CHLORIDE	: LC 50: > 19000 ppm Exposure time: 4 h Species: Rat
	Method: OECD Test Guideline 403

Acute dermal toxicity

Acute dermal toxicity -	: no data available
Product	

Acute dermal toxicity - Components

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SOLVENT NAPHTHA (PETROLEUM), LIGHT	: LD 50: > 4,000 mg/kg Species: Rat
ALIPHATIC	
ETHANOL	: LD Lo: 20 g/kg Species: Rabbit
DISTILLATES	: LD 50: > 2,000 mg/kg Species: Rabbit
(PETROLEUM),	
HYDROTREATED	
LIGHT NAPHTHENIC	

Acute toxicity (other routes of administration)

Acute toxicity (other	: no data available
routes of administration)	

12. ECOLOGICAL INFORMATION

Biodegradability

Biodegradability - Product	: no data available

Biodegradability - Components

ETHYL CHLORIDE	: 0 % Method: Closed Bottle test Remarks: Not readily
	biodegradable.

Bioaccumulation

Bioaccumulation - Product : no data available

Ecotoxicity effects

Toxicity to fish

Toxicity to fish - Product	: no data available	

Toxicity to fish - Components

ETHANOL	: LC 50: 12,000 - 16,000 mg/l
	Exposure time: 96 h
	Species: Rainbow trout, donaldson trout (Oncorhynchus
	mykiss)
	Test Type: static test



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Toxicity to daphnia and other aquatic invertebrates				
Toxicity to daphnia and	: no data available			
other aquatic invertebrates				
- Product				

Toxicity to daphnia	and other aquatic invertebrates - Components	
ETHANOL	: EC 50: > 10,000 mg/l	
	Exposure time: 48 h	
	Species: Water flea (Daphnia magna)	
	Test Type: static test	

ETHYL CHLORIDE	: LC 50: 58 mg/l
	Exposure time: 48 h
	Species: Water flea (Daphnia hyalina)
	Test Type: static test

Toxicity to algae

Toxicity to algae -	: no data available	
Product		

Toxicity to algae - Comp	onents
ETHYL CHLORIDE	: 118 mg/l
	Exposure time: 72 h
	Species: Desmodesmus subspicatus (green algae)
	Test Type: static test

Toxicity to bacteria

Toxicity to bacteria -	: no data available
Product	

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations.



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NAPA® MAC'S PREMIUM STARTING FLUID 636515

14. TRANSPORT INFORMATION

REGULATION

NEGU		. 1				
ID		PROPER SHIPPING NAME	*HAZARD	SUBSIDIARY	PACKING	MARINE
NUM	BER		CLASS	HAZARDS	GROUP	POLLUTANT
	DLK		CLADD		OKOUI	
						/ LTD. QTY.
<u>U.S. D</u>	OT - RC					
		ORM-D, CONSUMER	ORM			
		COMMODITY				
		CommoDilli				
U.S. D	OT - RA					
		ORM-D, CONSUMER	ORM			
		COMMODITY				
	OT - IN	LAND WATERWAYS				
U.D. D		ORM-D, CONSUMER	ORM			
			UKW			
		COMMODITY				
TRAN	SPORT	CANADA - ROAD				
UN	1950	AEROSOLS	2.1			LIMITED
						QUANTITY
						Quintini
	~~~~					
		CANADA - RAIL				
UN	1950	AEROSOLS	2.1			LIMITED
						QUANTITY
						<b>C</b>
		CANADA - INLAND WATER				
UN	1950	AEROSOLS	2.1			LIMITED
						QUANTITY
INTER	RNATIO	NAL MARITIME DANGERO	US GOODS			
UN	1950	AEROSOLS	2.1			LIMITED
UN	1930	AEROSOLS	2.1			
						QUANTITY
INTEF	RNATIO	NAL AIR TRANSPORT ASSO	CIATION - CA	ARGO		
UN	1950	Aerosols, flammable (engine	2.1			
21.	1700	starting fluid)				
		starting fluid)				

#### INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

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# NAPA® MAC'S PREMIUM STARTING FLUID 636515

UN	1950	Aerosols, flammable (engine	2.1	
		starting fluid)		

# MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN	1950	AEROSOLES	2	
*ORM :	= ORM-l	D, CBL = COMBUSTIBL	E LIQUID	

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

#### **15. REGULATORY INFORMATION**

#### California Prop. 65

Proposition 65 warnings are not required for this product based	
on the results of a risk assessment.	

#### SARA Hazard Classification

SARA 311/312 Classification Acute Health Hazard Fire Hazard Sudden Release of Pressure Hazard Chronic Health Hazard

#### SARA 313 Component(s)

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### New Jersey RTK Label Information

SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPHATIC	64742-89-8
ETHYL ETHER	60-29-7
CARBON DIOXIDE	124-38-9
ETHANOL	64-17-5
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-53-6
NAPHTHENIC	
TOLUENE	108-88-3

#### **Pennsylvania RTK Label Information**

SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPHATIC	64742-89-8

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# NAPA® MAC'S PREMIUM STARTING FLUID 636515

ETHYL ETHER	60-29-7
CARBON DIOXIDE	124-38-9
ETHANOL	64-17-5

#### **Notification status**

y (positive listing)
y (positive listing)
y (positive listing)
y (positive listing)
n (Negative listing)
y (positive listing)
y (positive listing)
y (positive listing)

#### **Reportable quantity - Product**

US. EPA CERCLA Hazardous Substances (40 CFR 302)	340 lbs
--------------------------------------------------	---------

#### **Reportable quantity-Components**

ETHYL ETHER	60-29-7	100 lbs

	HMIS	NFPA
Health	2	1
Flammability	4	4
Physical hazards	0	
Instability		0
Specific Hazard		

#### **16. OTHER INFORMATION**

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

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Material Safety Data Sheet May be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910.1200. Standard must be consulted for specific requirements.	<b>U.S. Department of Labor</b> Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072					
Identity (As Used on Label and List) MAPP GAS	Note: Blank	space	s are not permitte	d. If any item is no ce must be marked		
SECTION 1	inui.					
Supplier's Name Lenox	Emergency	Telep	hone Number 800-62	8-8810		
Address Number, Street, City, State and ZIP Code	Telephone N		er for Information 800-628-881			
301 Chestnut Street	Date Prepar		e 14, 2007			
East Longmeadow, MA 01028			of Preparer (Optic	onal)		
SECTION II - Hazardous Ingredients / Identity Info	rmation					
Hazardous Components Specific Chemical Identity, Common Name(s)	OSHA P	EL	ACGIH TLV	Other Limits Recommended	% (optional)	
Liquefied Petroleum Gas w/ Methylacetylene Liquefied Petroleum Gas CAS NO. 68476-85-7	N/A 1000PPI	л	N/A	N/A	56.0	
Methyl Acetylene-Propadiene CAS NO. 56470-85-7	1000PPI				44.0	
NFPA HAZARD RATINGS Health - 2	HMIS RA	TIN	GS Health -1			
Flammability - 4 Reactivity - 0			Flammabilit Reactivity -			
Notes				-		
SECTION III - Physical / Chemical Characteristics						
Boiling Point		Spe	cific Gravity (H ₂ 0			
	o -10º F			0.571		
Vapor Pressure (mm Hg) @ 70° F 9	7 psig	Mel	ting Point	N/A		
Vapor Density (AIR=1)	psig	Eva	poration Rate			
	1.48		yl Acetate -1)	N/A		
Solubility in Water						
Slight						
Appearance and Odor Colorless - unpleasant odor at	approx. 1	00p	pm			
SECTION IV - Fire and Explosion Hazard Data					-	
Flash Point (Method Used) Closed Cup -156° F			e Limits	LEL 3.0	UEL 11.0	
Extinguishing Media Eliminate oxygen source						
Dry chemical or CO ₂ to re-	-		-		·	
Special Fire Fighting Procedures						
Cool cylinders with water. Keep	-		-			
Unusual Fire and Explosion Hazards Auto Ignition temp. 850 continue to cool cylinder until gas flow is shut						
SECTION V - Reactivity Data						
Stability →       Unstable       Conditions to Avoid         Stable       X       Do not expose to tempatures above 125° F.						
Incompatibility (Materials to Avoid)						
Extremely flammable. Avoid uncontrolled contact with oxidizers.						
Hazardous Decomposition or Byproducts None						
Hazardous May Occur Conditions						
Polymerization $\rightarrow$ Will Not Occur X	N/A					

SECTION VI	- Health Hazard Data								
Routes of Entry →	Inhalation: YES	?	Skin YES		Ingestion? UNLIKELY				
Health Hazards (A	cute and Chronic)								
4	Asphyxiant. May reduce oxygen required for breathing. Liquid gas may freeze skin.								
Carcinogenicity →	cinogenicity→ NTP? IARC Monographs? OSHA Regulated? N/A NO								
Signs and Sympton	ns of Exposure								
Dizziness	to unconsciousness if hig	gh concent	trations of g	jas replace	oxygen for breathing.				
Medical Conditions	s Generally Aggravated by Exposure								
	N/A								
Emergency and Fir				_					
	Remove perso	n to fresh a	air If unco	nscious, se	ek medical attention.				
Warning			_	_					
					fuel, contain chemicals				
				ause cance	r, birth defects, and				
CE CELON VI	other reprodu								
	- Precautions for Safe Hand n Case Material is Released or Spilled	lling and Us	se						
	Remove ignitic	on sources	. Ventilate a	irea.					
Waste Disposal Me		ohere in ou	itdoor area	free of all s	ources of ignition.				
Precautions to be T	aken in Handling and Storing Store in well ve	entilated a	rea away fro	om all igniti	on sources.				
	Store at tempa		-	-					
Other Precautions									
	N/A								
SECTION VI	I - Control Measures								
	Respiratory Protection (Specify Type) Not required with normal use.								
Ventilation $\rightarrow$	Local Exhaust Advisable when welding.	Mechanical	· /	Special N/A	Other N/A				
Protective Gloves Advisable when welding. Eye Protection Use filter shade No. 4 or darker when welding.									
Other Protective Clothing or Equipment									
Work / Hygienic Practices N/A									
SECTION IX	- Shipping Information								
WHMIS Classifica	ation: A - Compressed Gas & B1-Flam			Clas					
DOT	Proper Shipping Nam Methyl Acetylene and Propadiene Mixe		Hazard Clas		<b>UN. No.</b> 1060				



# MSDS No. 12096 Trade Name: MAX BORE HDD Revision Date: 12/20/2010 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name:	MAX BORE	HDD					
Chemical Family: Product Use:	Mixture Drilling fluid	Mixture Drilling fluid additive.					
Supplied by: Telephone Number: Emergency Telephone (2 Prepared by:	Houston, TX www.miswad 281-561-150 281-561-160	M-I L.L.C. P.O. Box 42842 Houston, TX 77242 www.miswaco.slb.com 281-561-1509 281-561-1600 Product Safety Group					
Revision No.	5						
HMIS Rating Health: 1*	Flammability: 0	Physical Hazard: 0	PPE:	Е			

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

## 2. HAZARDS IDENTIFICATION

Emergency Overview:	Caution! May cause mechanical irritation of eyes, skin and respiratory tract. Long term inhalation of particulates may cause lung damage. Cancer hazard. Contains crystalline silica which may cause cancer.			
Canadian Classification: UN PIN No: Not regulated.	WHMIS Class: D2A			
Physical State: Powder	Color: Tan to grey Odor: Odorless			
Potential Health Effects: Acute Effects Eye Contact: Skin Contact: Inhalation: Ingestion:	May cause mechanical irritation May cause mechanical irritation. Long term contact can cause skin dryness. May cause mechanical irritation. May cause gastric distress, nausea and vomiting if ingested.			
Carcinogenicity & Chronic Effects: Routes of Exposure: Target Organs/Medical Conditions Aggravated by Overexposure:	See Section 11 - Toxicological Information. Eyes. Dermal (skin) contact. Inhalation. Eyes. Skin. Respiratory System.			

Trade Name: MAX BORE HDD

MSDS No. 12096

#### Revision Date: 12/20/2010

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Bentonite	1302-78-9	80 - 95	No comments.
Silica, crystalline, quartz	14808-60-7	2 - 15	No comments.
Silica, crystalline, Tridymite	15468-32-3	0 - 1	No comments.
Gypsum (Calcium sulfate)	13397-24-5	0 - 1	CAS 7778-18-9 also applies.

#### 4. FIRST AID MEASURES

Eye Contact:	Promptly wash eyes with lots of water while lifting eye lids. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
General notes:	Persons seeking medical attention should carry a copy of this MSDS with them.

# 5. FIRE FIGHTING MEASURES

#### **Flammable Properties**

 Flash Point: F (C):
 NA

 Flammable Limits in Air - Lower (%): NA

 Flammable Limits in Air - Upper (%): NA

 Autoignition Temperature: F (C): NA

 Flammability Class:
 NA

 Other Flammable Properties:
 ND

 Extinguishing Media:
 This material is not combustible. Use extinguishing media appropriate for surrounding fire.

#### Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

#### Hazardous Combustion Products: Not determined.

#### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** 

Use personal protective equipment identified in Section 8.

<b>MSDS No.</b> 12096	Trade Name: MAX BORE HDD Revision Date: 12/20/2010	Page 3/6
Spill Procedures:	Contain spilled material. If released into the environment, take measures to repair, remedy and confine the effects of the subs manage, remove or otherwise dispose of the substance in acc applicable laws and regulations. Wet product may create a slip the generation of dust. Sweep, vacuum, or shovel and place in for disposal.	stance. Remediate, ordance with oping hazard. Avoid
Environmental Precautions:	Waste must be disposed of in accordance with federal, state a	ind local laws.

## 7. HANDLING AND STORAGE

Handling:Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is<br/>slippery if wet. Use only in a well ventilated area. Put on appropriate personal<br/>protective equipment. Wash thoroughly after handling.Storage:Store in dry, well-ventilated area. Keep container closed. Store away from<br/>incompatibles. Follow safe warehousing practices regarding palletizing, banding,<br/>shrink-wrapping and/or stacking.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Bentonite	1302-78-9	80 - 95	NA	NA	NA	(1)
Silica, crystalline, quartz	14808-60-7	2 - 15	0.025 mg/m ³	see Table Z-3	50 mg/m ³	(R)
					IDLH	
					(NIOSH)	
Silica, crystalline, Tridymite	15468-32-3	0 - 1	0.05 mg/m ³	see Table Z-3	NA	(R)
Gypsum (Calcium sulfate)	13397-24-5	0 - 1	10 mg/m ³	15 mg/m³	NA	None
				(total); 5		
				mg/m³		
				(respirable)		

#### Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable). (R) Respirable fraction.

Table Z-3: PEL for Mineral Dusts containing crystalline silica are 10 mg/m³ / (%SiO2+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite. 29 CFR 1910.1000.

**Engineering Controls:** Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

#### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

#### Eye/Face Protection:

Dust resistant safety goggles.

Trade Name: MAX BORE HDD Revision Date: 12/20/2010

MSDS No. 12096

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Skin Protection:	Wear appropriate clothing to prevent repeated or prolonged skin contact. Chemical resistant gloves recommended for prolonged or repeated contact. Use protective gloves made of: Nitrile. Neoprene.
Respiratory Protection:	All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.
	If exposed to airborne particles of this product use at least a NIOSH-approved N95 half-mask disposable or re-useable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or re-useable particulate respirator.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

# **10. STABILITY AND REACTIVITY**

Chemical Stability: Conditions to Avoid:	Stable Keep away from heat, sparks and flame.
Materials to Avoid:	ND.
Hazardous Decomposition	For thermal decomposition products, see Section 5.
Products:	Will not occur
Hazardous Polymerization	

#### **11. TOXICOLOGICAL INFORMATION**

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Trade Name: MAX BORE HDD Revision Date: 12/20/2010

**MSDS No.** 12096

#### Ingredient Component Toxicological Summary Silica, crystalline, Crystalline silica is the most widely occurring of all minerals. The most common form of silica is sand. The International Agency for Research on Cancer (IARC) has designated crystalline silica quartz in the form of quartz or cristobalite a Group 1 (carcinogenic to humans). This designation was based on an increased risk of lung cancer among crystalline silica exposed workers. IARC did note that carcinogenicity of crystalline silica in humans was not detected in all industrial circumstances studied. Further, carcinogenicity of crystalline silica may be dependent on inherent characteristics of the crystalline silica or external factors affecting its biological activity or distribution of polymorphs. (IARC Vol. 68, 1997, p. 41). The National Toxicology Program (NTP) classifies crystalline silica as "reasonably anticipated to cause cancer in humans" (6th Annual Report on Carcinogens, 1991). Long term inhalation of crystalline silica can also result in the lung disease, silicosis. Symptoms of this disease include coughing and shortness of breath. (NJ HSFS, January 1996)

#### **Product Toxicological Information:**

Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

#### 12. **ECOLOGICAL INFORMATION**

**Component Ecotoxicity Data:** in the component review. **Product Ecotoxicity Data:** Contact M-I Environmental Affairs Department for available product ecotoxicity data. **Biodegration:** ND **Bioaccumulation:** ND **Octanol/Water Partition** ND **Coefficient:** 

13.

Component ecotoxicity data are listed below. If no data are listed, none were found

**DISPOSAL CONSIDERATIONS** 

Waste Classification:	ND
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

#### TRANSPORT INFORMATION 14.

U.S. DOT **Shipping Description:** 

**Canada TDG Shipping Description:** UN PIN No:

Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA. Not regulated. Not regulated.

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Trade Name: MAX BORE HDD

MSDS No. 12096

Revision Date: 12/20/2010

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#### IMDG Shipping Description: ICAO/IATA Shipping Description:

Not regulated. Not regulated.

# **15. REGULATORY INFORMATION**

#### U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Delayed (chronic) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro. F	CA 65 Repro. M
Silica, crystalline, quartz				Х			
Silica, crystalline, Tridymite				Х			

#### **International Chemical Inventories**

Australia AICS - Components are listed or exempt from listing. Canada DSL - Components are listed or exempt from listing. China Inventory - Components are listed or exempt from listing. European Union EINECS/ELINCS - Components are listed or exempt from listing. Japan METI ENCS - Components are listed or exempt from listing. Korea TCCL ECL - Components are listed or exempt from listing. Philippine PICCS - Components are listed or exempt from listing. U.S. TSCA - Components are listed or exempt from listing. U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

#### Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: D2A

**16. OTHER INFORMATION** 

The following sections have been revised: 1, 3, 6, 12, 16.

#### NA - Not Applicable, ND - Not Determined.

#### Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



<b>MSDS No.</b> 10618	Trade Name:	MAX GEL*	Revision Date: 12/15/2010
1.	<b>CHEMICAL PROD</b>	DUCT AND	COMPANY IDENTIFICATION

Trade Name:	MAX GEL*	MAX GEL*					
Chemical Family: Product Use:	Mixture Drilling fluid ad	Mixture Drilling fluid additive.					
Supplied by:	Houston, TX 7 www.miswaco.	P.O. Box 42842 Houston, TX 77242 www.miswaco.slb.com					
Telephone Number:	281-561-1511						
Emergency Telephone (2 Prepared by:		281-561-1600 Draduat Safaty Croup					
Flepaled by.	FIGURE Salety	Product Safety Group					
Revision No.	7						
HMIS Rating Health: 1*	Flammability: 0	Physical Hazard: 0	PPE:	Е			

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

# 2. HAZARDS IDENTIFICATION

Emergency Overview:	Caution! May cause mechanical irritation of eyes, skin and respiratory tract. Long term inhalation of particulates may cause lung damage. Cancer hazard. Contains crystalline silica which may cause cancer.			
Canadian Classification: UN PIN No: Not regulated.	WHMIS Class: D2A			
Physical State: Powder	Color: Tan to Gray Odor: Odorless			
Potential Health Effects: Acute Effects Eye Contact: Skin Contact: Inhalation: Ingestion:	May cause mechanical irritation May cause mechanical irritation. Long term contact can cause skin dryness. May cause mechanical irritation. May cause gastric distress, nausea and vomiting if ingested.			
Carcinogenicity & Chronic Effects: Routes of Exposure: Target Organs/Medical Conditions Aggravated by Overexposure:	See Section 11 - Toxicological Information. Eyes. Dermal (skin) contact. Inhalation. Eyes. Skin. Respiratory System.			

Trade Name: MAX GEL*

MSDS No. 10618

**Revision Date:** 12/15/2010

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#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Bentonite	1302-78-9	>90	No comments.
Silica, crystalline, quartz	14808-60-7	2 - 15	No comments.
Silica, crystalline, Tridymite	15468-32-3	0 - 1	No comments.
Gypsum (Calcium sulfate)	13397-24-5	0 - 1	CAS 7778-18-9 also applies.

## 4. FIRST AID MEASURES

Eye Contact:	Promptly wash eyes with lots of water while lifting eye lids. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
General notes:	Persons seeking medical attention should carry a copy of this MSDS with them.

# 5. FIRE FIGHTING MEASURES

#### **Flammable Properties**

 Flash Point: F (C):
 NA

 Flammable Limits in Air - Lower (%): NA

 Flammable Limits in Air - Upper (%): NA

 Autoignition Temperature: F (C): NA

 Flammability Class:
 NA

 Other Flammable Properties:
 ND

 Extinguishing Media:
 This material is not combustible.
 Use extinguishing media appropriate for surrounding fire.

#### Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

#### Hazardous Combustion Products: Not determined.

#### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** 

Use personal protective equipment identified in Section 8.

MATERIAL SAFETY DATA SHEET Trade Name: MAX GEL*				
<b>MSDS No.</b> 10618	<b>Revision Date:</b> 12/15/2010	Page 3/6		
Spill Procedures:	Contain spilled material. If released into the environment, ta measures to repair, remedy and confine the effects of the su manage, remove or otherwise dispose of the substance in a applicable laws and regulations. Wet product may create a s the generation of dust. Sweep, vacuum, or shovel and place for disposal.	ubstance. Remediate, accordance with slipping hazard. Avoid		
Environmental Precautions:	Waste must be disposed of in accordance with federal, state	e and local laws.		
Environmental Precautions:	for disposal.			

#### HANDLING AND STORAGE 7.

Handling:

Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only in a well ventilated area. Wash thoroughly after handling.

Store in dry, well-ventilated area. Keep container closed. Store away from Storage: incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

#### **EXPOSURE CONTROLS/PERSONAL PROTECTION** 8.

#### Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Bentonite	1302-78-9	>90	NA	NA	NA	(1)
Silica, crystalline, quartz	14808-60-7	2 - 15	0.025 mg/m ³	see Table Z-3	50 mg/m ³	(R)
					IDLH	
					(NIOSH)	
Silica, crystalline, Tridymite	15468-32-3	0 - 1	0.05 mg/m ³	see Table Z-3	NA	(R)
Gypsum (Calcium sulfate)	13397-24-5	0 - 1	10 mg/m ³	15 mg/m ³	NA	None
				(total); 5		
				mg/m ³		
				(respirable)		

#### Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable). (R) Respirable fraction.

Table Z-3: PEL for Mineral Dusts containing crystalline silica are 10 mg/m³ / (%SiO2+2) for quartz and 1/2 the calculated guartz value for cristobalite and tridymite. 29 CFR 1910.1000.

Engineering Controls: Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

#### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

#### **Eye/Face Protection:**

Dust resistant safety goggles.

Trade Name: MAX GEL* Revision Date: 12/15/2010

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# Skin Protection: Wear appropriate clothing to prevent repeated or prolonged skin contact. Chemical resistant gloves recommended for prolonged or repeated contact. Use protective gloves made of: Nitrile. Neoprene.

**Respiratory Protection:**All respiratory protection equipment should be used within a comprehensive<br/>respiratory protection program that meets the requirements of 29 CFR 1910.134<br/>(U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne particles of this product use at least a NIOSH-approved N95 half-mask disposable or re-useable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or re-useable particulate respirator.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Solubility (Water):Insoluble.Melting/Freezing Point:NDBoiling Point:NDVapor Pressure:NAVapor Density (Air=1):NAEvaporation Rate:NAOdor Threshold(s):ND
--------------------------------------------------------------------------------------------------------------------------------------------------------

## **10. STABILITY AND REACTIVITY**

Chemical Stability: Conditions to Avoid:	Stable Keep away from heat, sparks and flame.
Materials to Avoid:	ND.
Hazardous Decomposition	For thermal decomposition products, see Section 5.
Products: Hazardous Polymerization	Will not occur

# 11. TOXICOLOGICAL INFORMATION

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Trade Name: MAX GEL*

MSDS No. 10618 Revision Date: 12/15/2010

Ingredient Component Toxicological Summary Silica, crystalline, Crystalline silica is the most widely occurring of all minerals. The most common form of silica is sand. The International Agency for Research on Cancer (IARC) has designated crystalline silica quartz in the form of quartz or cristobalite a Group 1 (carcinogenic to humans). This designation was based on an increased risk of lung cancer among crystalline silica exposed workers. IARC did note that carcinogenicity of crystalline silica in humans was not detected in all industrial circumstances studied. Further, carcinogenicity of crystalline silica may be dependent on inherent characteristics of the crystalline silica or external factors affecting its biological activity or distribution of polymorphs. (IARC Vol. 68, 1997, p. 41). The National Toxicology Program (NTP) classifies crystalline silica as "reasonably anticipated to cause cancer in humans" (6th Annual Report on Carcinogens, 1991). Long term inhalation of crystalline silica can also result in the lung disease, silicosis. Symptoms of this disease include coughing and shortness of breath. (NJ HSFS, January 1996)

#### **Product Toxicological Information:**

Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

## **12. ECOLOGICAL INFORMATION**

Product Ecotoxicity Data: Biodegration: Bioaccumulation:

**Octanol/Water Partition** 

**Coefficient:** 

**Component Ecotoxicity Data:** 

Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

Contact M-I Environmental Affairs Department for available product ecotoxicity data. ND ND ND

## **13. DISPOSAL CONSIDERATIONS**

Waste Classification:	ND
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

#### **14. TRANSPORT INFORMATION**

U.S. DOT Shipping Description:

Canada TDG Shipping Description: UN PIN No:

Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA. Not regulated. Not regulated.

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Trade Name: MAX GEL*

MSDS No. 10618

Revision Date: 12/15/2010

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#### IMDG Shipping Description: ICAO/IATA Shipping Description:

Not regulated. Not regulated.

# **15. REGULATORY INFORMATION**

#### U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Delayed (chronic) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro. F	CA 65 Repro. M
Silica, crystalline, quartz				Х			
Silica, crystalline, Tridymite				Х			

#### **International Chemical Inventories**

Australia AICS - Components are listed or exempt from listing. Canada DSL - Components are listed or exempt from listing. China Inventory - Components are listed or exempt from listing. European Union EINECS/ELINCS - Components are listed or exempt from listing. Japan METI ENCS - Components are listed or exempt from listing. Korea TCCL ECL - Components are listed or exempt from listing. New Zealand - Components are listed or exempt from listing. Philippine PICCS - Components are listed or exempt from listing. U.S. TSCA - Components are listed or exempt from listing. U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

#### Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: D2A

#### **16. OTHER INFORMATION**

The following sections have been revised: 1, 6, 8, 12, 16.

#### NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

#### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



X Close this window

MSDS

Common Name: QUARTZ METAL HALIDE LAMPS - QMH

Manufacturer: GE CONSUMER & INDUSTRIAL LIGHTING

MSDS Revision Date: 3/1/2009

Grainger Item Number(s): 1C251, 1C263, 1C279, 1C344, 1C347, 1C854, 1E099, 1E279, 1E637, 1E639, 1E641, 1E643, 1E671, 1E674, 1E686, 1E690, 1E692, 1E694, 1F276, 1F278, 1F346, 1F348, 1F396, 1F398, 1G980, 1K015, 1K425, 1MM51, 1MM55, 1PCY8, 1PCY9, 1PCZ1, 1PCZ2, 1PCZ3, 1PCZ4, 1PCZ5, 1RD93, 1RF30, 1RF31, 1TJP9, 1TJR1, 1TJR2, 1TJR3, 1TJR4, 1TJR5, 1TJR6, 1TJR7, 1TJR8, 1TJT1, 1TJT2, 1TJT3, 1VZ60, 2DZW7, 2DZW8, 2DZW9, 2DZX1, 2DZX2, 2DZX3, 2DZX4, 2DZX5, 2DZX6, 2DZX7, 2DZX8, 2DZX9, 2F103, 2F105, 2F109, 2F111, 2F192, 2F196, 2F202, 2F942, 2F944, 2F968, 2F970, 2PB27, 2PB28, 2TJ25, 2TJ26, 2TJ27, 2TJ28, 2TJ29, 2V658, 2V659, 2V712, 2VAD8, 2VAD9, 2XKW9, 2XKX1, 2XKX2, 2XKX5, 2XKX6, 2XKX7, 2YGD2, 2YGD3, 2YGD4, 2YGD5, 2YGD6, 2YGD7, 2YGD8, 2YGD9, 2YGE1, 2YGE2, 2YGE3, 2YGE4, 2YGE5, 2YGE6, 2YGE7, 2YGE8, 2YGE9, 3APK1, 3APK2, 3APK3, 3APK4, 3DXR7, 3DXR8, 3DXR9, 3DXT1, 3DXT2, 3DXT3, 3DXT4, 3DXT5, 3JJ92, 3JJ96, 3JJ97, 3JK01, 3JK02, 3JK41, 4DA14, 4DA27, 4LV87, 4LV88, 4PL04, 4PL05, 4PL06, 4PL07, 4PL08, 4V484, 4V516, 4V518, 4V550, 4V561, 4V565, 4V596, 4V603, 4WW46, 4WW54, 4XMA5, 5CVK3, 5CVK4, 5CVK5, 5GTN0, 5GTN1, 5HB77, 5HB78, 5HB79, 5HB80, 5HB81, 5HB82, 5HB83, 5HB84, 5HB87, 5HB88, 5HB89, 5HB90, 5HB91, 5HB92, 5HB93, 5HB94, 5TB70, 5V658, 5V691, 5V978, 5XN33, 5XN44, 5XN58, 5XN59, 5XN60, 5XN61, 5XN64, 5XN65, 5XP29, 5XP46, 5XP47, 5XP48, 6V630, 6V698, 6V699, 6V746, 6V747, 6V748, 6V749, 6V751, 6V752, 6V753, 6V754, 6V755, 6V756, 6V757, 6V758, 6V759, 6XT44, 6XT76, 6XT77, 6XT89, 6XT90, 6XT91, 6XT92, 6XT93, 6XT94, 6XV24, 6XV25, 6XV27, 6XV28, 6XV41

Manufacturer Model Number(s):

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MATERIAL SAFETY DATA SHEETS (MSDS)

GΕ

GE CONSUMER & INDUSTRIAL - LIGHTING

LAMP MATERIAL INFORMATION SHEET - QUARTZ METAL HALIDE LAMP

#### INFORMATION AND APPLICABILITY:

THE MATERIAL SAFETY DATA SHEET (MSDS) REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) FOR REGULATED CHEMICALS UNDER, 21 CFR 1900.1200 ARE NOT APPLICABLE TO MANUFACTURED ARTICLES. GE METAL HALIDE LAMPS ARE CLASSIFIED AS ARTICLES, AND THEREFORE EXEMPT FROM THIS REGULATION.

top

NO MATERIAL CONTAINED IN A LAMP IS RELEASED DURING NORMAL USE AND OPERATION.

THE FOLLOWING INFORMATION IS PROVIDED AS A COURTESY SERVICE TO OUR CUSTOMERS. THIS LAMP MATERIAL INFORMATION SHEET CONTAINS APPLICABLE MATERIAL SAFETY DATA SHEET INFORMATION.

#### I. PRODUCT IDENTIFICATION

GE QUARTZ METAL HALIDE LAMPS - QMH: APPLICABLE LAMP TYPES: MVR, MVT, MPR AND MXR

GE CONSUMER & INDUSTRIAL - LIGHTING 1975 NOBLE ROAD NELA PARK CLEVELAND, OH 44112

(216) 266-2222

#### **II. LAMP MATERIALS AND HAZARDOUS INGREDIENTS**

GLASS:

THESE LAMPS CONSIST OF AN INNER QUARTZ ARC TUBE ENCLOSED IN AN OUTER ENVELOPE OF HEAT-RESISTANT GLASS. DEPENDING ON THE LAMP TYPE, THE ENVELOPE IS EITHER CLEAR, OR COATED WITH ONE OF TWO DIFFERENT MATERIALS. THE "MVR," "MVT" AND "MPR" LAMPS ARE COATED WITH A PHOSPHOR MATERIAL ON THE INSIDE OF THE BULB, WHILE "MXR" LAMPS ARE COATED WITH A DIFFUSING MATERIAL.

#### PHOSPHOR:

THE PHOSPHOR USED ON THE INSIDE SURFACE OF THE OUTER ENVELOPE OF COATED LAMPS CONSISTS OF YTTRIUM VANADATE PHOSPHATE. THIS MATERIAL, LIKE MOST VANADIUM COMPOUNDS, IS RELATIVELY INSOLUBLE, AND APPEARS TO HAVE A MUCH LOWER TOXICITY THAN VANADIUM PENTOXIDE, BUT MAY ELICIT SOME SIMILAR SYMPTOMS AT HIGH EXPOSURE LEVELS.

EXCESSIVE INHALATION EXPOSURE TO VANADIUM PENTOXIDE MAY RESULT IN IRRITATION OF THE NASAL PASSAGES AND RESPIRATORY TRACT, COUGH, DIFFICULTY IN BREATHING, AND BRONCHITIS. HOWEVER, THE YTTRIUM VANADIUM PHOSPHATE FROM THE BREAKAGE OF ONE OR A SMALL NUMBER OF LAMPS SHOULD NOT RESULT IN A SIGNIFICANT EXPOSURE.

THE PHOSPHOR USED ON SOME LAMPS MAY ALSO CONTAIN THE ADDITION OF A SMALL AMOUNT OF MAGNESIUM GERMANATE PHOSPHOR, A TOXICOLOGICALLY RELATIVELY INERT MATERIAL.

THE MATERIAL USED AS A DIFFUSER IN THE "MXR" LAMPS IS SPECIALLY PREPARED KAOLIN CLAY THAT CONTAINS NO CRYSTALLINE SILICA OR ASBESTOS AS IMPURITIES. THESE TYPES OF CLAYS ARE GENERALLY CONSIDERED TO BE TOXICOLOGICALLY RELATIVELY INERT MATERIALS.

#### ARC TUBE:

THE QUARTZ ARC TUBE CONTAINS A SMALL AMOUNT OF MERCURY, RANGING FROM LESS THAN 5 MILLIGRAMS IN LOW WATTAGE LAMPS, UP TO 165 MG IN A 1500-WATT LAMP. FURTHER, THE ARC TUBE CONTAINS A SMALL AMOUNT OF INERT GAS, ARGON, USED AS A FILL GAS. ARGON IS A STABLE, CHEMICALLY INERT GAS. A FEW LAMP TYPES MAY ALSO MIX A SMALL QUANTITY OF KR-85 WITH ARGON INSIDE THE ARC TUBE. KRYPTON-85 IS USED TO IMPROVED IONIZATION AND STARTABILITY OF THE LAMP. IF Grainger MSDS Lookup

PRESENT, THE ACTIVITY LEVEL OF KR-85 WILL RANGE FROM 0.04 - 0.86 MICROCURIES ((MICRO)Ci) (1.57-31.9KBQ). QUARTZ ARC TUBES ALSO CONTAIN A SMALL AMOUNT OF THORIUM EMBEDDED WITHIN THE TUNGSTEN ELECTRODE TO IMPROVE STARTING PERFORMANCE. IF THORIUM IS PRESENT IN EITHER THE ELECTRODE OR DOSE, THE TOTAL ACTIVITY OF TH-232 IS LESS THAN 0.004 (MICRO)Ci (0.148KBQ). THERE WOULD BE NO SIGNIFICANT EXPOSURE FROM LAMP BREAKAGE.

ALSO CONTAINED WITHIN THE ARC TUBE ARE SMALL AMOUNTS OF OTHER MATERIALS, REFERRED TO AS THE DOSE. THE COMBINATION OF THESE MATERIALS WITHIN THE PLASMA DISCHARGE CREATES THE "WHITE LIGHT" OF QMH LAMPS. THESE COMPOUNDS INCLUDES SODIUM AND SCANDIUM IODIDE, AND IN SOME CASES THORIUM IODIDE AND CADMIUM. NONE OF THESE MATERIALS IS EXPECTED TO BE A HAZARD IN THE SMALL QUANTITIES PRESENT IN THE ARC TUBE. THE COATING ON THE END(S) OF THE ARC TUBE IS ALUMINUM OXIDE, A MATERIAL GENERALLY CONSIDERED TO HAVE A LOW ORDER OF TOXICITY.

#### METALS:

INTERNALLY, THE SUPPORT WIRES USED IN THE LAMP CONSTRUCTION ARE MADE FROM NICKEL-COATED IRON OR STAINLESS STEEL WHILE THE ELECTRODES ARE TUNGSTEN. MANY OF THE METAL HALIDE TYPES WILL USE A BRASS BASE AND HAVE LEAD-SOLDERED CONNECTIONS TO THAT BASE.

#### GETTERS:

GETTERS EMPLOYED WITHIN THE OUTER ENVELOPE ARE USE TO EXTEND THE LIFE OF THE LAMP. QUARTZ METAL HALIDE LAMPS TYPICALLY USE EITHER, ZIRCONIUM ALUMINUM OR BARIUM PEROXIDE GETTERS. THESE GETTERS ARE IN SOLID FORM AND DO NOT PRESENT AN EXPOSURE RISK ON INTACT OR BROKEN LAMPS.

#### GASES:

THE OUTER ENVELOPE OF THE QMH LAMP IS FILLED WITH ARGON TO A SUB-ATMOSPHERIC PRESSURE. ARGON IS A STABLE, CHEMICALLY INERT GAS.

#### **III. HEALTH CONCERNS**

MERCURY EXPOSURE:

THE AIR CONCENTRATION OF MERCURY RESULTING FROM THE BREAKAGE OF ONE OR A SMALL NUMBER OF LAMPS SHOULD RESULT IN NO SIGNIFICANT EXPOSURE TO THE INDIVIDUAL. HOWEVER, IF BREAKING A LARGE NUMBER OF LAMPS FOR DISPOSAL,



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APPROPRIATE MONITORING, CONTROLS, AND EQUIPMENT SHOULD BE IMPLEMENTED TO CONTROL AIRBORNE MERCURY AND DUST LEVELS OR SURFACE CONTAMINATION. SUCH WORK SHOULD BE DONE IN A WELL-VENTILATED AREA, AND LOCAL EXHAUST VENTILATION OR PERSONAL PROTECTIVE EQUIPMENT MAY BE NEEDED. COMPLY WITH ALL APPLICABLE REGULATIONS.

#### ULTRAVIOLET (UV) RADIATION:

THE QUARTZ ARC TUBE, WHEN OPERATING, GENERATES A CONSIDERABLE AMOUNT OF ULTRAVIOLET RADIATION. THE UV IS FILTERED TO ACCEPTABLE LEVELS BY THE GLASS OUTER ENVELOPE DURING NORMAL USE. HOWEVER, IF THE OUTER ENVELOPE IS BROKEN, THE UV FILTERING IS LOST.

LAMPS HAVING ORDERING CODES BEGINNING WITH THE LETTERS "MVR", "MPR" OR "MXR" HAVE THE FOLLOWING R-WARNING NOTICE REQUIRED UNDER FEDERAL REGULATION 21 CFR 1040.30:

#### "WARNING:

THIS LAMP CAN CAUSE SERIOUS SKIN BURN AND EYE INFLAMMATION FROM SHORTWAVE ULTRAVIOLET RADIATION IF OUTER ENVELOPE OF THE LAMP IS BROKEN OR PUNCTURED. DO NOT USE WHERE PEOPLE WILL REMAIN FOR MORE THAN A FEW MINUTES UNLESS ADEQUATE SHIELDING OR OTHER SAFETY PRECAUTIONS ARE USED. LAMPS THAT WILL AUTOMATICALLY EXTINGUISH WHEN THE OUTER ENVELOPE IS BROKEN OR PUNCTURED ARE COMMERCIALLY AVAILABLE.

THIS LAMP CERTIFIED TO COMPLY WITH FDA RADIATION PERFORMANCE STANDARDS, 21 CFR SUBCHAPTER J.

USA: 21 CFR 1040.30

CANADA: SOR/80-381"

THE SELF-EXTINGUISHING METAL HALIDE LAMPS REFERRED TO ABOVE HAVE ORDER CODES BEGINNING WITH THE LETTERS "MVT." IF THE OUTER GLASS ENVELOPE OF A SAF-T-GARD LAMP IS BROKEN, ALTHOUGH THE ARC TUBE WILL HAVE SELF-EXTINGUISHED, ITS SUPPORT STRUCTURE WILL STILL BE ELECTRICALLY CONNECTED AND COULD PRESENT AN ELECTRICAL SHOCK HAZARD. THEREFORE, REGARDLESS OF THE TYPE, IF THE OUTER ENVELOPE OF THE LAMP IS BROKEN, TURN THE POWER OFF BEFORE REPLACING THE LAMPS.

FOR ADDITIONAL INFORMATION ON PROTECTION FROM UV RADIATION, VISIT THE FDA

WEBSITE FOR MORE INFORMATION:

HTTP://WWW.FDA.GOV/CDRH/RADHEALTH/PRODUCTS/URBURNS.HTML

#### **IV. FIRE AND EXPLOSION DATA**

WARNING:

UNEXPECTED LAMP RUPTURE MAY CAUSE INJURY, FIRE, OR PROPERTY DAMAGE. DO NOT USE LAMP BEYOND RATED LIFE AND ADHERE TO ALL APPLICABLE CAUTION AND WARNING NOTICES. TO FURTHER REDUCE THE POSSIBILITY OF RUPTURE, TURN LAMP OFF AT LEAST ONCE FOR 15 MINUTES PER WEEK.

AN ARC TUBE RUPTURE CAN BURST AND SHATTER THE OUTER GLASS BULB RESULTING IN THE DISCHARGE OF GLASS FRAGMENTS AND EXTREMELY HOT QUARTZ PARTICLES (AS HIGH AS 1100 DEG. C). THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS, AND FIRE.

CAUTION AND WARNING NOTICES FOR EACH GE PRODUCT MAY BE VIEWED ONLINE AT HTTP://WWW.GELIGHTING.COM/

FURTHER GUIDANCE ON THE APPLICATION AND USE OF QUARTZ METAL HALIDE LAMPS IS AVAILABLE FROM NEMA DOCUMENT LSD 25, BEST PRACTICES FOR METAL HALIDE LIGHTING SYSTEM, PLUS QUESTIONS AND ANSWERS ABOUT LAMP RUPTURES IN METAL HALIDE LIGHTING SYSTEMS. LSD 25 MAY BE VIEWED ONLINE AT HTTP://WWW.NEMA.ORG/

#### **V. DISPOSAL CONCERNS**

TCLP:

A TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) TEST CONDUCTED ON THE LAMP FOR LEAD OR MERCURY COULD CAUSE THE LAMP TO BE CLASSIFIED AS A HAZARDOUS WASTE. METAL HALIDE LAMPS USE LEAD SOLDER ON THE LAMP BASE AND MERCURY IN THE ARC TUBE. THE LEAD SOLDER OR MERCURY VAPOR SHOULD POSE LITTLE RISK OF EXPOSURE UNDER NORMAL USE AND HANDLING. WHILE SMALL NUMBERS OF THESE LAMPS PLACED IN THE ORDINARY HOUSEHOLD TRASH SHOULD NOT APPRECIABLY AFFECT THE NATURE OR METHOD OF DISPOSAL OF THE TRASH IN MOST STATES, UNDER SOME CIRCUMSTANCES DISPOSAL OF THESE LAMPS IS REGULATED. MANY



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BUSINESSES IN THE UNITED STATES MANAGE THESE LAMPS AS UNIVERSAL WASTES. YOU SHOULD REVIEW YOUR WASTE HANDLING PRACTICES TO ASSURE THAT YOU DISPOSE OF WASTE LAMPS PROPERLY.

SOME STATES REQUIRE ALL MERCURY CONTAINING LAMPS TO BE RECYCLED, CONTACT YOUR STATE ENVIRONMENTAL DEPARTMENT FOR ANY REGULATIONS THAT MAY APPLY. TO CHECK STATE REGULATIONS OR TO LOCATE A RECYCLER, GO TO HTTP://WWW.LAMPRECYCLE.ORG/ OR CALL 1-800-435-4448.

QUARTZ METAL HALIDE LAMPS - LMIS

MARCH 2009 - SUPERSEDES AUGUST 2004

GE2014-9281

# **Material Safety Data Sheet**



Nitrogen

# Section 1. Chemical product and company identification

Product name	: Nitrogen
Supplier	<ul> <li>AIRGAS INC., on behalf of its subsidiaries</li> <li>259 North Radnor-Chester Road</li> <li>Suite 100</li> <li>Radnor, PA 19087-5283</li> <li>1-610-687-5253</li> </ul>
Product use	: Synthetic/Analytical chemistry. Liquid – cryogenic coolant.
Synonym	<ul> <li>nitrogen (dot); nitrogen gas; Nitrogen NF, LIN, Cryogenic Liquid Nitrogen, Liquid Nitrogen</li> </ul>
MSDS #	: 001040
Date of Preparation/ Revision	: 11/22/2013.
In case of emergency	: 1-866-734-3438

# Section 2. Hazards identification

Physical state	: Gas. [NORMALLY A COLORLESS GAS: MAY BE A CLEAR COLORLESS LIQUID AT LOW TEMPERATURES. SOLD AS A COMPRESSED GAS OR LIQUID IN STEEL CYLINDERS.]
Emergency overview	: WARNING!
	GAS: CONTENTS UNDER PRESURE. Do not puncture or incinerate container. Can cause rapid suffocation. May cause severe frostbite. LIQUID: Extremely cold liquid and gas under pressure. Can cause rapid suffocation. May cause severe frostbite.
	Do not puncture or incinerate container. May cause target organ damage, based on animal data.
	Contact with rapidly expanding gases or liquids can cause frostbite.
Target organs	: May cause damage to the following organs: lungs.
Routes of entry	: Inhalation
Potential acute health eff	<u>ects</u>
Eyes	: Contact with rapidly expanding gas may cause burns or frostbite. Contact with cryogenic liquid can cause frostbite and cryogenic burns.
Skin	: Contact with rapidly expanding gas may cause burns or frostbite. Contact with cryogenic liquid can cause frostbite and cryogenic burns.
Inhalation	: Acts as a simple asphyxiant.
Ingestion	<ul> <li>Ingestion is not a normal route of exposure for gases. Contact with cryogenic liquid can cause frostbite and cryogenic burns.</li> </ul>
Potential chronic health	effects
Chronic effects	: May cause target organ damage, based on animal data.
Target organs	: May cause damage to the following organs: lungs.
Medical conditions aggravated by over- exposure	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

# Section 3. Composition, Information on Ingredients

Name Nitrogen CAS number <u>% Volume</u> 7727-37-9 100

Exposure limits Oxygen Depletion [Asphyxiant]

# Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact	<ul> <li>Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.</li> </ul>
Skin contact	: None expected.
Frostbite	: Try to warm up the frozen tissues and seek medical attention.
Inhalation	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	: As this product is a gas, refer to the inhalation section.

# Section 5. Fire-fighting measures

Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.
	Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.
Fire-fighting media and instructions	: Use an extinguishing agent suitable for the surrounding fire.
Products of combustion	<ul> <li>Decomposition products may include the following materials: nitrogen oxides</li> </ul>
Flammability of the product	: Non-flammable.

# Section 6. Accidental release measures

and will easily fracture.

Personal precautions	: Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.
Environmental precautions	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for cleaning up	: Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

# Section 7. Handling and storage

Handling

High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
 Never allow any unprotected part of the body to touch uninsulated pipes or vessels that contain cryogenic liquids. Prevent entrapment of liquid in closed systems or piping without pressure relief devices. Some materials may become brittle at low temperatures

Nitrogen

Storage

Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).
 For additional information concerning storage and handling refer to Compressed Gas Association pamphlets P-1 Safe Handling of Compressed Gases in Containers and P-12 Safe Handling of Cryogenic Liquids available from the Compressed Gas Association,

### Section 8. Exposure controls/personal protection

Inc.

Engineering controls	: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Personal protection	
Eyes	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
	When working with cryogenic liquids, wear a full face shield.
Skin	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
	The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93
Hands	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
	Insulated gloves suitable for low temperatures
Personal protection in case of a large spill	: Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.
Product name	
Nitrogen	Oxygen Depletion [Asphyxiant]

Consult local authorities for acceptable exposure limits.

## Section 9. Physical and chemical properties

Molecular weight	:	28.02 g/mole
Molecular formula	:	N2
<b>Boiling/condensation point</b>	:	-195.79°C (-320.4°F)
Melting/freezing point	:	-210.01°C (-346°F)
Critical temperature	:	-146.9°C (-232.4°F)
Vapor density	:	0.967 (Air = 1) Liquid Density@BP: 50.46 lb/ft3 (808.3 kg/m3)
Specific Volume (ft ³ /lb)	:	13.8889
Gas Density (lb/ft 3)	:	0.072

## Section 10. Stability and reactivity

Stability and reactivity	: The product is stable.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

Toxicity data	
Chronic effects on humans	: May cause damage to the following organs: lungs.
Other toxic effects on humans	: No specific information is available in our database regarding the other toxic effects of this material to humans.
Specific effects	
Carcinogenic effects	: No known significant effects or critical hazards.
Mutagenic effects	: No known significant effects or critical hazards.
Reproduction toxicity	: No known significant effects or critical hazards.

## Section 12. Ecological information

#### Aquatic ecotoxicity

Not available.

**Environmental fate** 

**Environmental hazards** 

: Not available.

: No known significant effects or critical hazards.

Toxicity to the environment : Not available.

## Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.Return cylinders with residual product to Airgas, Inc.Do not dispose of locally.

## Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1066	NITROGEN, COMPRESSED	2.2	Not applicable (gas).	HOWFLAMMARLE GAS	<u>Limited</u> <u>quantity</u> Yes.
	UN1977	Nitrogen, refrigerated liquid				Packaging instruction Passenger aircraft Quantity limitation: 75 kg Cargo aircraft Quantity limitation: 150 kg
TDG Classification	UN1066 UN1977	NITROGEN, COMPRESSED Nitrogen, refrigerated liquid	2.2	Not applicable (gas).		Explosive Limit and Limited Quantity Index 0.125 Passenger Carrying Road or Rail Index 75

Build 1.1

Nitrogen						
Mexico Classification	UN1066	NITROGEN, COMPRESSED	2.2	Not applicable (gas).	I SHY LAWRENCE CAS	-
	UN1977	Nitrogen, refrigerated liquid				

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

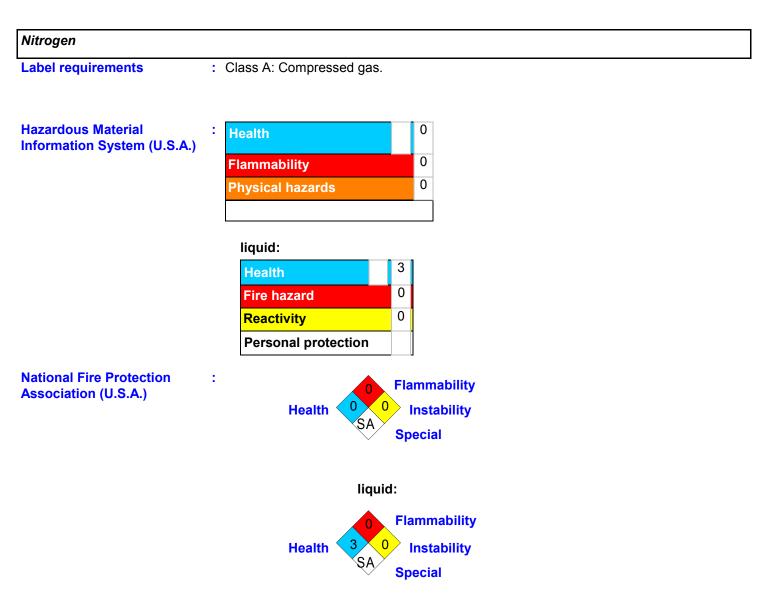
## Section 15. Regulatory information

United States	
U.S. Federal regulations	: TSCA 8(a) CDR Exempt/Partial exemption: This material is listed or exempted. United States inventory (TSCA 8b): This material is listed or exempted.
	SARA 302/304: No products were found. SARA 311/312 Hazards identification: Sudden release of pressure, Delayed (chronic) health hazard
State regulations	<ul> <li>Connecticut Carcinogen Reporting: This material is not listed.</li> <li>Connecticut Hazardous Material Survey: This material is not listed.</li> <li>Florida substances: This material is not listed.</li> <li>Illinois Chemical Safety Act: This material is not listed.</li> <li>Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.</li> </ul>
	Louisiana Reporting: This material is not listed.
	Louisiana Spill: This material is not listed. Massachusetts Spill: This material is not listed.
	Massachusetts Substances: This material is listed.
	Michigan Critical Material: This material is not listed.
	Minnesota Hazardous Substances: This material is not listed.
	New Jersey Hazardous Substances: This material is listed.
	New Jersey Spill: This material is not listed. New Jersey Toxic Catastrophe Prevention Act: This material is not listed.
	New York Acutely Hazardous Substances: This material is not listed.
	New York Toxic Chemical Release Reporting: This material is not listed.
	Pennsylvania RTK Hazardous Substances: This material is listed.
	Rhode Island Hazardous Substances: This material is not listed.
<u>Canada</u>	
WHMIS (Canada)	: Class A: Compressed gas.
	CEPA Toxic substances: This material is not listed. Canadian ARET: This material is not listed. Canadian NPRI: This material is not listed. Alberta Designated Substances: This material is not listed. Ontario Designated Substances: This material is not listed. Quebec Designated Substances: This material is not listed.

## Section 16. Other information

United States	
Label requirements	: GAS: CONTENTS UNDER PRESURE. Do not puncture or incinerate container. Can cause rapid suffocation. May cause severe frostbite. LIQUID: Extremely cold liquid and gas under pressure. Can cause rapid suffocation. May cause severe frostbite.

#### Canada



#### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.





#### Material Safety Data Sheet: Oxygen

Product Name: Oxygen	CAS: 7782-44-7
Oxygen; Oxygen, compressed (D.O.T.)	DOT I.D No.: UN 1072
Chemical Name and Synonyms: Oxygen	DOT Hazard Class: Division 2.2
Formula: O ₂	Chemical Family: Oxidizer

### HEALTH HAZARD DATA

#### Time Weighted Average Exposure Limit:

None established (ACGIH 1994-1995). Oxygen is the "vital element" in the atmosphere in which we live and breathe.

#### Symptoms of Exposure:

Breathing high concentrations (greater than 75 molar percent) causes symptoms of hyperoxia which includes cramps, nausea, dizziness, hypothermia, amblyopia, respiratory difficulties, bradycardia, fainting spells, and convulsions capable of leading to death. For additional information on hyperoxia, see Compressed Gas Association's Pamphlet P-14.

#### **Toxicological Properties:**

- The property is that hyperoxia which leads to pneumonia. Concentrations between 25 and 75 molar percent present a risk of inflammation of organic matte in the body.
- Oxygen is not listed in the LARC, NTP or by OSHA as a carcinogen or potential carcinogen.
- Persons in ill health where such illness would be aggravated by exposure to oxygen should not be allowed to work with or handle this product.

#### **Recommended First Aid Treatment:**

Prompt medical attention is mandatory in all cases of overexposure to oxygen. Rescue personnel should be cognizant of extreme fire hazard associated with oxygen-rich atmosphere.

Conscious persons should be assisted to an uncontaminated area and breathe fresh air. They should be kept warm and quiet. The physician should be informed that the victim is experiencing hyperoxia.

Unconscious persons should be moved to an uncontaminated area and given assisted respiration. When breathing has been restored, treatment should be as above. Continues treatment should be symptomatic and supportive.

Hazardous Mixtures of other Liquids, Solids or Gases:

Oxygen vigorously accelerates combustion. Contact with all flammable materials should be avoided. Some materials that are not flammable in air will burn in pure oxygen or oxygen-enriched atmospheres.

PHYSICAL DATA		
Boiling Point: -297.3°F (-182.9°C)	Liquid Density at Boiling Point: 71.23 lb/ft3 (1141 kg/m3)	
<b>Vapor Pressure</b> @ 70°F (21.1°C) = Above the critical temperature of -181.1°F (-118.4°C)	<b>Gas Density at 70°F. 1 atm</b> .0725 lb/ft3 (1.161 kq/m3)	
Solubility in Water: Slightly	Freezing Point: -361.8°F (-218.8°C)	
Evaporation Rate: N/A (Gas)	<b>Specific Gravity (AIR=1)</b> @ 70°F (21.1°C) = 1.11	
Appearance and Odor: Colorless, odorless gas		

### FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): N/A GasAuto Ignition Temperature: N/A		Flammable Limits % by Volume: LEL N/A UEL N/A	
Extinguishing Media: Copious of oxygen as the oxidizer.	Electrical Classification: Nonhazardous		
<b>Special Fire fighting Procedures:</b> If possible, stop the flow of oxygen, which is supporting the fire. If cylinders are involved in a fire, safely relocate or keep cool with water spray.			
Unusual Fire and Explosion Hazards: Vigorously accelerates combustion.			

### **REACTIVITY DATA**

Stability: Stable Incompatibility (Materials to Avoid): None Hazardous Decomposition Products: All flammable materials Hazardous Polymerization: Will not occur Conditions to Avoid: None

### SPILL OR LEAK PROCEDURES

#### Steps to be taken in case material is released or spilled:

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas to attempting repairs. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.

#### Waste disposal methods:

Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed herein.

### SPECIAL PROTECTION INFORMATION

**Respiratory Protection (Specify type):** Positive pressure air line with mask or selfcontained breathing apparatus should be available for emergency use.

Ventilation: See Local Exhaust

Local Exhaust: To prevent accumulation above 25 molar percent.

Protective Gloves: As required; any material

Eye Protection: Safety goggles or glasses

Other Protective Equipment: Safety shoes, safety shower

### **SPECIAL PRECAUTIONS**

#### **Special Labeling Information:**

DOT Shipping Name: Oxygen, Compressed DOT Hazard Class: Division 2.2 DOT Shipping Label: Nonflammable Gas I.D. No.: UN 1072

#### **Special Handling Recommendation:**

Use only in well-ventilated areas. Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure-reducing regulator when connecting cylinder to lower pressure (<3,000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. For additional handling recommendations, consult Compressed Gas Association's Pamphlets P-1, P-14, and G-4.

#### **Special Storage Recommendations:**

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits and away from full or empty stored cylinders which contain flammable products. Do not allow the temperature where cylinders are stored to exceed 125F (52C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in -first out" inventory system to prevent full cylinders being stored for excessive periods of time. For additional storage recommendations, consult Compressed Gas Association's Pamphlets P-1, P-i4, and G-4.

#### **Other Recommendations or Precautions:**

Oxygen should not be used as a substitute for compressed air in pneumatic equipment since this type generally contains flammable lubricants. Equipment to contain oxygen must be "cleaned for oxygen service." See Compressed Gas Association Pamphlet G-4.1. Compressed gas cylinders should not be refilled except by qualified producers of compressed gases.

#### **Special Packaging Recommendations:**

Carbon steels and low alloy steels are acceptable for use at lower pressures. For high pressure applications use stainless steels, copper and its alloys, nickel and its alloys, brass, bronze, silicon alloys, Monel[®], Inconel[®], or beryllium. Lead and silver or lead and tin alloys are good gasketing materials. Teflon[®] and Kel-F[®] are the preferred nonmetal gaskets. Special Note: It should be recognized that the ignition temperature of metals and nonmetals in pure oxygen service decreases with increasing oxygen pressure.

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# Material Safety Data Sheet



Oxygen

## Section 1. Chemical product and company identification

Product name	: Oxygen
Supplier	: AIRGAS INC., on behalf of its subsidiaries 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
Product use	: Synthetic/Analytical chemistry.
Synonym	<ul> <li>Molecular oxygen; Oxygen molecule; Pure oxygen; O2; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)</li> </ul>
MSDS #	: 001043
Date of Preparation/ Revision	: 9/24/2013.
In case of emergency	: 1-866-734-3438

## Section 2. Hazards identification

Physical state	:	Gas. [Compressed gas.]
Emergency overview	:	DANGER!
		GAS: OXIDIZER. CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE. CONTENTS UNDER PRESURE. Do not puncture or incinerate container. May cause severe frostbite. LIQUID: OXIDIZER. CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE. Extremely cold liquid and gas under pressure. May cause severe frostbite. Do not puncture or incinerate container. Store in tightly-closed container. Avoid contact
		with combustible materials.
		Contact with rapidly expanding gases or liquids can cause frostbite.
Routes of entry	1	Inhalation
Potential acute health effects		
Eyes	1	May cause eye irritation. Contact with rapidly expanding gas may cause burns or frostbite. Contact with cryogenic liquid can cause frostbite and cryogenic burns.
Skin	:	May cause skin irritation. Contact with rapidly expanding gas may cause burns or frostbite. Contact with cryogenic liquid can cause frostbite and cryogenic burns.
Inhalation	:	Respiratory system irritation after overexposure to high oxygen concentrations.
Ingestion	1	Ingestion is not a normal route of exposure for gases. Contact with cryogenic liquid can cause frostbite and cryogenic burns.
Medical conditions aggravated by over- exposure	:	Acute or chronic respiratory conditions may be aggravated by overexposure to this gas.
See toxicological information	n (S	Section 11)

Oxygen

## Section 3. Composition, Information on Ingredients

<u>Name</u>
<u> </u>

Oxygen

 CAS number
 % Volume

 7782-44-7
 100

Exposure limits

### Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact	<ul> <li>Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.</li> </ul>
Skin contact	: None expected.
Frostbite	: Try to warm up the frozen tissues and seek medical attention.
Inhalation	<ul> <li>Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.</li> </ul>
Ingestion	: As this product is a gas, refer to the inhalation section.

## Section 5. Fire-fighting measures

Flammability of the product	: Non-flammable.
Products of combustion	: No specific data.
Fire hazards in the presence of various substances	: Extremely flammable in the presence of the following materials or conditions: reducing materials, combustible materials and organic materials.
Fire-fighting media and instructions	: Use an extinguishing agent suitable for the surrounding fire.
	Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.
	Contains gas under pressure. Contact with combustible material may cause fire. This material increases the risk of fire and may aid combustion. In a fire or if heated, a pressure increase will occur and the container may burst or explode.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

### Section 6. Accidental release measures

Personal precautions	s C	mmediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Eliminate all ignition sources if safe to do so. Do not touch or walk through spilled material. Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.
Environmental precautions		Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for cleaning up	te	mmediately contact emergency personnel. Stop leak if without risk. Use spark-proof ools and explosion-proof equipment. Note: see Section 1 for emergency contact nformation and Section 13 for waste disposal.

## Section 7. Handling and storage

Handling

High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Store in tightly-closed container. Avoid contact with combustible materials. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
 Never allow any unprotected part of the body to touch uninsulated pipes or vessels that

contain cryogenic liquids. Prevent entrapment of liquid in closed systems or piping without pressure relief devices. Some materials may become brittle at low temperatures

and will easily fracture. Storage : Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalies, reducing agents and combustibles. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Section 8. Exposure controls/personal protection **Engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Personal protection Eves : Safety evewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. When working with cryogenic liquids, wear a full face shield. Skin Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Respiratory Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93 Hands Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Insulated gloves suitable for low temperatures Personal protection in case Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the з. of a large spill product. Product name Oxygen

Consult local authorities for acceptable exposure limits.

## Section 9. Physical and chemical properties

Molecular weight	: 32 g/mole
Molecular formula	: 02
Boiling/condensation point	: -183°C (-297.4°F)
Melting/freezing point	: -218.4°C (-361.1°F)
Critical temperature	: -118.15°C (-180.7°F)
Vapor density	<b>:</b> 1.1 (Air = 1)
Specific Volume (ft ³ /lb)	: 12.0482
Gas Density (lb/ft ³ )	: 0.083

## Section 10. Stability and reactivity

Stability and reactivity	: The product is stable.
Incompatibility with various substances	: Extremely reactive or incompatible with the following materials: oxidizing materials, reducing materials and combustible materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Oxygen

## Section 11. Toxicological information

Toxicity data	
Other toxic effects on humans	: No specific information is available in our database regarding the other toxic effects of this material to humans.
Specific effects	
Carcinogenic effects	: No known significant effects or critical hazards.
Mutagenic effects	: No known significant effects or critical hazards.
Reproduction toxicity	: No known significant effects or critical hazards.

## Section 12. Ecological information

Aquatic ecotoxicity	
Not available.	
Environmental fate	: Not available.
Environmental hazards	: This product shows a low bioaccumulation potential.
Toxicity to the environment	: Not available.

## Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.Return cylinders with residual product to Airgas, Inc.Do not dispose of locally.

## Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1072	OXYGEN, COMPRESSED	2.2	Not applicable (gas).	NORTA SIMIALE CAS	<u>Limited</u> <u>quantity</u> Yes.
	UN1073	Oxygen, refrigerated liquid			UNICER	Packaging instruction Passenger aircraft Quantity limitation: 75 kg Cargo aircraft Quantity limitation: 150 kg Special provisions A52

Oxygen						
TDG Classification	UN1072	OXYGEN, COMPRESSED	2.2	Not applicable (gas).	2	Explosive Limit and Limited
	UN1073	Oxygen, refrigerated liquid				Quantity Index 0.125
					*	ERAP Index 3000
						Passenger Carrying Ship Index 50
						Passenger Carrying Road or Rail Index 75
						<u>Special</u> provisions 42
Mexico Classification	UN1072	OXYGEN, COMPRESSED	2.2	Not applicable (gas).	VICH FLOWAGE DO.	-
	UN1073	Oxygen, refrigerated liquid			ONDER 5.1	

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

## Section 15. Regulatory information

United States	
U.S. Federal regulations	: TSCA 8(a) CDR Exempt/Partial exemption: This material is listed or exempted. United States inventory (TSCA 8b): This material is listed or exempted.
	SARA 302/304: No products were found.
	SARA 311/312 Hazards identification: Fire hazard, Sudden release of pressure
State regulations	: Connecticut Carcinogen Reporting: This material is not listed.
	Connecticut Hazardous Material Survey: This material is not listed.
	Florida substances: This material is not listed.
	Illinois Chemical Safety Act: This material is not listed.
	Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.
	Louisiana Reporting: This material is not listed.
	Louisiana Spill: This material is not listed.
	Massachusetts Spill: This material is not listed.
	Massachusetts Substances: This material is listed.
	Michigan Critical Material: This material is not listed.
	Minnesota Hazardous Substances: This material is not listed.
	New Jersey Hazardous Substances: This material is listed.
	New Jersey Spill: This material is not listed.
	New Jersey Toxic Catastrophe Prevention Act: This material is not listed.
	New York Acutely Hazardous Substances: This material is not listed.
	New York Toxic Chemical Release Reporting: This material is not listed.
	Pennsylvania RTK Hazardous Substances: This material is listed.

#### Rhode Island Hazardous Substances: This material is not listed.

#### **Canada** WHMIS (Canada)

: Class A: Compressed gas. Class C: Oxidizing material. CEPA Toxic substances: This material is not listed. Canadian ARET: This material is not listed. Canadian NPRI: This material is not listed. Alberta Designated Substances: This material is not listed. Ontario Designated Substances: This material is not listed. Quebec Designated Substances: This material is not listed.

### Section 16. Other information

#### **United States**

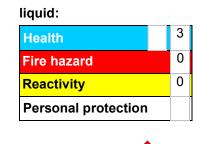
Label requirements	<ul> <li>: GAS: OXIDIZER. CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE. CONTENTS UNDER PRESURE. Do not puncture or incinerate container. May cause severe frostbite. LIQUID: OXIDIZER. CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE. Extremely cold liquid and gas under pressure. May cause severe frostbite.</li> </ul>
Canada	

Label requirements

: Class A: Compressed gas. Class C: Oxidizing material.







**National Fire Protection** Association (U.S.A.)

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#### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



#### Section 1: IDENTIFICATION

#### 1.1 PRODUCT IDENTIFIER

Product Name:	PB Penetrating Catalyst (Aerosol)
---------------	-----------------------------------

16-PB, 8-PB, 8-PBS, PBTS, 20-PB

#### **1.2 RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE**

Use:

**Product Code:** 

Lubricant

#### **1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET**

Name/Address:	The Blaster Corporation 8500 Sweet Valley Drive Valley View, Ohio 44125 – USA
Telephone Number:	T (216) 901-5800 F (216) 901-5801

#### **1.4 EMERGENCY TELEPHONE NUMBER**

Emergency Telephone Number: CHEMTREC: (800) 424-9300

Date of Preparation:

May 26, 2014 Version #: 1.0

Section 2: HAZARD(S) IDENTIFICATION

#### 2.1 CLASSIFICATION OF THE CHEMICAL ACCORDING TO OSHA HAZCOM 2012

Hazard class

Flammable Aerosol 2 Gases Under Pressure (Dissolved Gas) Serious Eye Irritation 2A Carcinogenicity 2 Aspiration Hazard 1

#### 2.2 LABEL ELEMENTS ACCORDING TO OSHA HAZCOM 2012

Hazard Pictogram:



Signal Word: Hazard Statement:

Prevention:

Danger

Flammable aerosol. Contains gas under pressure; may explode if heated. Causes serious eye irritation. Suspected of causing cancer. May be fatal if swallowed and enters airways.

Keep away from heat/sparks/open flames/hot surfaces. -No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Wash hands thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.



Response:	If exposed or concerned: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If swallowed: Immediately call a poison center or doctor. Do NOT induce vomiting.
Storage:	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place. Store locked up.
Disposal:	Dispose of contents and container in accordance with all local, regional, national and international regulations.

#### 2.3 ADDITIONAL INFORMATION

Hazards not otherwise classified: Not applicable.

8 % of the mixture consists of ingredient(s) of unknown acute toxicity.

This product is a hazardous chemical as defined by NOM-018-STPS-2000.

#### Mexico Classification:



Blue = HealthRed = FlammabilityYellow = ReactivityWhite = SpecialHazard Rating:0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 MIXTURES

Ingredient	UN #	H / F/ R / *	CAS No	Wt. %
Distillates (petroleum), hydrotreated light	Not available	Not available	64742-47-8	50 - 60
Solvent naphtha (petroleum), heavy		NOT available	04742-47-0	30 - 00
aromatic	UN1270	Not available	64742-94-5	20 - 30
Distillates (petroleum), hydrotreated				
heavy naphthenic	Not available	Not available	64742-52-5	20 - 30
Carbon dioxide	UN1013	1/0/0	124-38-9	1 - 5
	UN1334/			
Naphthalene	UN2304	2/2/0	91-20-3	2 - 3
Dinonylphenol, ethoxylated, phosphated	Not available	Not available	39464-64-7	0.5 - 1.5

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

* Per NOM-018-STPS-2000



#### Section 4: FIRST- AID MEASURES

#### 4.1 DESCRIPTION OF THE FIRST AID MEASURE

Eye:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.	
Skin:	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.	
Inhalation:	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.	
Ingestion:	If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.	
4.2 MOST IMPORTANT SYMPT	OMS AND EFFECTS, BOTH ACUTE AND DELAYED	
Eye:	Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.	
Skin:	May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.	
Inhalation:	May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.	
Ingestion:	May cause respiratory tract irritation.	
4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS NEEDED		
Note to Physicians:	Symptoms may not appear immediately.	
Specific Treatments:	In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).	

Section 5: FIRE-FIGHTING MEASURES

#### 5.1 EXTINGUISHING MEDIA

Suitable Extinguishing Media: Dry chemical, carbon dioxide or foam.

Unsuitable Extinguishing Media: Water may be ineffective for extinguishing fire.

#### 5.2 SPECIAL HAZARDS ARISING FROM THE CHEMICAL

**Products of Combustion:** May include, and are not limited to: oxides of carbon, hydrocarbons.

#### 5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Cool closed containers exposed to fire with water. Do not use a solid water stream as it may scatter and spread fire. Containers may explode when heated.



#### Section 6: ACCIDENTAL RELEASE MEASURES

#### 6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition.

#### 6.2 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING - UP

Methods for Containment:	Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
Methods for Cleaning-Up:	Scoop up material and place in a disposal container. Vapors may be heavier than air and may travel along the ground to a distant ignition source and flash back. Provide ventilation.

Section 7: HANDLING AND STORAGE

#### 7.1 PRECAUTIONS FOR SAFE HANDLING

Handling:	Keep away from sources of ignition No smoking. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/ spray. Do not swallow. When using do not eat, drink or smoke. Do not spray on an open flame or other ignition source. Use only outdoors or in a well-ventilated area. Pressurized container: Do not pierce or burn, even after use. (See section 8)	
General Hygiene Advice:	Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.	
7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES		
Storage:	Keep locked up and out of reach of children. Do not expose to	

temperatures exceeding 50 °C/ 122 °F. Store in dry, cool, wellventilated area. (See section 10)

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 CONTROL PARAMETERS

#### Exposure Guidelines

Occupational Exposure Limits		
Ingredient	OSHA-PEL	ACGIH-TLV
Distillates (petroleum), hydrotreated light	100 ppm	200 mg/m ³
Solvent naphtha (petroleum), heavy aromatic	Not available.	Not available.
Distillates (petroleum), hydrotreated heavy naphthenic	5 mg/m ³ (mist)	5 mg/m³ (mist)
	5000 ppm;	
Carbon dioxide	9000 mg/m ³	5000 ppm
	10 ppm;	
Naphthalene	50 mg/m ³	10 ppm
Dinonylphenol, ethoxylated, phosphated	Not available.	Not available.



#### **8.2 EXPOSURE CONTROLS**

#### Engineering Controls:

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

#### **8.3 INDIVIDUAL PROTECTIVE MEASURES**

**Personal Protective Equipment:** 

**Eye/Face Protection:** Safety glasses with side-shields.

Skin Protection:

Hand Protection: Wear chemically resistant protective gloves.

Body Protection: Wear suitable protective clothing.

Respiratory Protection:A NIOSH approved respirator is recommended in poorly ventilated areas<br/>or when permissible exposure limits may be exceeded. Respirator<br/>selection must be based on known or anticipated exposure levels, the<br/>hazards of the product and the safe working limits of the selected<br/>respirator.General Health and SafetyDo not eat, smoke or drink where material is handled, processed or

General Health and Safety Measures:

stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Section 9: PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Viscous / Oily.
Color:	Orange.
Odor:	Heavy aromatic.
Odor Threshold:	Not available.
Physical State:	Gas/pressurized liquid.
pH:	Not available.
Melting Point/Freezing Point:	Not available.
Initial Boiling Point and Boiling Range:	177.8 °C (352 °F)
Flash Point:	65.6 °C (150 °F)
Evaporation Rate:	<1 (n-butyl acetate = 1)
Flammability:	Flammable.
Lower Flammability/Explosive Limit:	Not available.
Upper Flammability/Explosive Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	>1 (Air = 1)
Relative Density/Specific Gravity:	0.91 (Water = 1)
Solubility:	Negligible.



Not available.
Not available.
< 25%
0 cm
45.8 kJ/g

#### Section 10: STABILITY AND REACTIVITY

#### **10.1 REACTIVITY**

No dangerous reaction known under conditions of normal use.

#### **10.2 CHEMICAL STABILITY**

Stable under normal storage conditions. Flammable aerosol. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn.

#### **10.3 POSSIBILITY OF HAZARDOUS REACTIONS**

No dangerous reaction known under conditions of normal use.

#### **10.4 CONDITIONS TO AVOID**

Heat. Incompatible materials. Sources of ignition. Excessive water.

#### **10.5 INCOMPATIBLE MATERIALS**

Strong oxidizing agents. Strong reducing agents. Moisture.

#### **10.6 HAZARDOUS DECOMPOSITION PRODUCTS**

May include, and are not limited to: oxides of carbon, hydrocarbons.

#### Section 11: TOXICOLOGICAL INFORMATION

#### **11.1 INFORMATION ON TOXICOLOGICAL EFFECTS**

Likely Routes of Exposure: Skin contact, eye contact, inhalation, and ingestion.

Symptoms related to physical/chemical/toxicological characteristics:

- **Eye:** Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- **Skin:** May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.
- **Ingestion:** May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.
- Inhalation: May cause respiratory tract irritation.



	<b>Toxicity:</b>
Acute	TOXICILY.

IDLH	LC50	LD50
	Inhalation	Oral >5000 mg/kg, rat;
Not available		Dermal >2000 mg/kg, rabbit
Hot a failable.	0.2 mg/2 m rat	
	Inhalation	Oral >5000 mg/kg, rat;
Not available.	>5.28 mg/L 4h, rat	Dermal >2000 mg/kg, rabbit
	Inhalation	Oral >5000 mg/kg, rat;
Not available.	>5.0 mg/L 4h, rat	Dermal >5000 mg/kg, rabbit
40000 ppm	Not available.	Not available.
		Oral 490 mg/kg, rat;
		Dermal >2500 mg/kg, rat;
250 ppm	Not available.	Dermal >20 g/kg, rabbit
Not available.	Not available.	Not available.
	Not available. Not available. Not available. 40000 ppm 250 ppm	Not available.       Inhalation         Not available.       >5.2 mg/L 4h rat         Inhalation       >5.28 mg/L 4h, rat         Inhalation       >5.28 mg/L 4h, rat         Inhalation       >5.0 mg/L 4h, rat         40000 ppm       Not available.         250 ppm       Not available.

Calculated overall Chemical Acute Toxicity Values					
LC50 (inhalation) LD50 (oral) LD50 (dermal)					
> 5 mg/L 4h, rat > 2000 mg/kg, rat > 2000 mg/kg, rabbit					

Ingredient	Chemical Listed as Carcinogen or Potential Carcinogen (NTP, IARC, OSHA, ACGIH, CP65)*
Distillates (petroleum), hydrotreated light	Not listed.
Solvent naphtha (petroleum), heavy aromatic	Not listed.
Distillates (petroleum), hydrotreated heavy naphthenic	Not listed.
Carbon dioxide	Not listed.
Naphthalene	G-A4, I-2B, N-2, CP65
Dinonylphenol, ethoxylated, phosphated	Not listed.

* See Section 15 for more information.

#### 11.2 DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

Skin Corrosion/Irritation:	Based on available data, the classification criteria are not met.
Serious Eye Damage/Irritation:	Causes serious eye irritation.
<b>Respiratory Sensitization:</b>	Based on available data, the classification criteria are not met.
Skin Sensitization:	Based on available data, the classification criteria are not met.
STOT-Single Exposure:	Based on available data, the classification criteria are not met.
Chronic Health Effects:	
Carcinogenicity:	Possible carcinogen.
Germ Cell Mutagenicity:	Based on available data, the classification criteria are not met.
Reproductive Toxicity:	
Developmental:	Based on available data, the classification criteria are not met.
Fertility:	Based on available data, the classification criteria are not met.
STOT-Repeated Exposure:	Based on available data, the classification criteria are not met.
Aspiration Hazard:	May be fatal if swallowed and enters airways.



**Other Information:** 

Not available.

Section 12: ECOLOGICAL INFORMATION

#### 12.1 ECOTOXICITY

Acute/Chronic Toxicity: May cause long-term adverse effects in the aquatic environment.

#### **12.2 PERSISTENCE AND DEGRADABILITY**

Not available.

#### **12.3 BIOACCUMULATIVE POTENTIAL**

Bioaccumulation: Not available.

#### 12.4 MOBILITY IN SOIL

Not available.

#### **12.5 OTHER ADVERSE EFFECTS**

Not available.

Section 13: DISPOSAL CONSIDERATIONS

#### **13.1 WASTE TREATMENT METHODS**

**Disposal Method:** 

This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

Other disposal recommendations:

Flammable vapours may accumulate in the container. Do not incinerate empty containers.

#### Section 14: TRANSPORT INFORMATION

#### 14.1 UN NUMBER

DOT

UN1950

#### **14.2 UN PROPER SHIPPING NAME**

#### DOT

AEROSOLS, flammable, limited quantities

#### 14.3 TRANSPORT HAZARD CLASS (ES)

#### DOT

2.1

#### **14.4 PACKING GROUP**

DOT

Not applicable.

#### NOM-004-SCT2-1994 UN1950

#### NOM-004-SCT2-1994

AEROSOLS, flammable, limited quantities

NOM-004-SCT2-1994

2.1

#### NOM-004-SCT2-1994

Not applicable.



#### **14.5 ENVIRONMENTAL HAZARDS**

Not available.

#### 14.6 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not available.

#### 14.7 SPECIAL PRECAUTIONS FOR USER

Do not handle until all safety precautions have been read and understood. The Blaster Corporation does not recommend shipping their aerosol products by air.

Section 15: REGULATORY INFORMATION

## 15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/ LEGISLATIONS SPECIFIC FOR THE CHEMICAL

**US:** SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Mexico: SDS prepared pursuant to NOM-018-STPS-2000.

SARA Title III					
Ingredient	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	
Distillates (petroleum),					
hydrotreated light	Not listed.	Not listed.	Not listed.	Not listed.	
Solvent naphtha (petroleum),					
heavy aromatic	Not listed.	Not listed.	Not listed.	Not listed.	
Distillates (petroleum),					
hydrotreated heavy					
naphthenic	Not listed.	Not listed.	Not listed.	Not listed.	
Carbon dioxide	Not listed.	Not listed.	Not listed.	Not listed.	
Naphthalene	Not listed.	Not listed.	100	313	
Dinonylphenol, ethoxylated,					
phosphated	Not listed.	Not listed.	Not listed.	Not listed.	

#### State Regulations

#### California Proposition 65:

This product contains a chemical known to the State of California to cause cancer.

#### **Global Inventories:**

Ingredient	USA TSCA
Distillates (petroleum), hydrotreated light	Yes.
Solvent naphtha (petroleum), heavy aromatic	Yes.
Distillates (petroleum), hydrotreated heavy naphthenic	Yes.
Carbon dioxide	Yes.
Naphthalene	Yes.
Dinonylphenol, ethoxylated, phosphated	Yes.



			re Protection Association:
Health:			2
Fire:			4
Reactivity:			0
		HMIS-Hazardous Mat	terials Identification System:
Health:			2*
Fire:			4
Physical Haz			0
	•	<b>U</b>	lerate, 3 = severe, 4 = extreme
SOURCE AGE	ENCY CARC	CINOGEN CLASSIFICA	ATIONS:
CP65	California	Proposition 65	
OSHA (O)	Occupatio	onal Safety and Health	n Administration.
ACGIH (G)	<ul> <li>American Conference of Governmental Industrial Hygienists.</li> <li>A1 - Confirmed human carcinogen.</li> <li>A2 - Suspected human carcinogen.</li> <li>A3 - Animal carcinogen.</li> <li>A4 - Not classifiable as a human carcinogen.</li> <li>A5 - Not suspected as a human carcinogen.</li> </ul>		
IARC (I)	1 - The ager 2A - The ag humans and 2B - The ag humans in tl 3 - The ager	d sufficient evidence of carci ent (mixture) is possibly card he absence of sufficient evid nt (mixture, exposure circum	
NTP (N)	1 - Known to	<b>Foxicology Program.</b> b be carcinogens. ably anticipated to be carcino	ogens.
		Section 16: O	THER INFORMATION
Date of Prep	aration:	May 26, 2014	
Version:		1.0	
Revision Da	te:	May 26, 2014	
are reliable, this document in combination	but they are g at applies to t on with any o	he statements, technica given without warranty o this specific material as	al information and recommendations contained herein or guarantee of any kind. The information contained in supplied. It may not be valid for this material if it is used user's responsibility to satisfy oneself as to the suitability r's own particular use.
Prepared by	:	Nexreg Compliance Phone: (519) 488-5 <u>www.nexreg.com</u>	
<b>Droparod</b> for		The Blaster Corpor	ration

Prepared for: 7

The Blaster Corporation

## End of Safety Data Sheet

## Order This Library on CD or DVD

PERMATEX	ANTI-SEIZE I	UBRICANT, 133K		<i></i>
Product and Company Identification Composition/Information on Ingredients Hazards Identification First Aid Measures Fire Fighting Measures Accidental Release Measures Handling and Storage Exposure Controls/Personal Protection		Physical and Chemical Properties Stability and Reactivity Toxicological Information Ecological Information Disposal Considerations Transport Information Regulatory Information Other Information / Hazmat Info	Υ.	
	MSDS Safe	ty Information	TOP	
FSC: 8030	NПN: 01-311- 6473	MSDS Date: 06/01/1987	MSDS Num: BQDCD	
Submitter: N EN		Tech Review: 12/30/1991	Status CD: C	
Product PERMAT ID:	EX ANTI-SEIZE L	UBRICANT, 133K	MFN: 01	
Article: N			Kit N Part:	
Respons     Name: LOCTITE	•	age: 05972		
Address: 4450 CRA	NWOOD COURT			
City: CLEVELA	ND	State: OH	Zip: 44128	
Countr Info Phone Numbe	y: US r: 216-475-3600; 80	0-321-9188		
Emergency Phone N	umber: 216-475-36	00; 800-321-9188		
	Prepare	er's Name: ROBERT J. CART	ER	
Proprieta Pul	ry Ind: N blished: Y	Revi Special Proj	ew Ind: N ect CD: N	
Contractor Summary			TOP	
Cage:05972	Cage:05972 Name:LOCTITE CORPORATION			
Address:1001 TROU City:ROCKY HI		NG State:CT	Zip:06067- 3910	
	Country:US	Phone:860-571-5100		1-365

= Item Description Information =

	Item Manager: NK				
\$	Item Name: ANTISEIZE C Specification Number: NK	OMPOUN	D Type/Grade/Class: NK		
	Unit of Issue: NK UI Container Qty: NK		Quantitative Expression: NK Type of Container:		
	I	ngredients		TOP	
	Cas:	Code: X	RTECS #: 10003741	LG Code: M	
	Name: LITHIUM GREASE				
	% Text: 60-65		Environmental Wt: Other REC Limits: N/K		
	OSHA PEL: NOT APPLICABLE	Code: M	OSHA STEL	Code:	
	ACGIH TLV: NOT APPLICABLE	Code: M	STEL: ACGIH N/P STEL:	Code:	
	EPA Rpt Qty:		BOT Rpt Qty:		
mos	Ozone Depleting Cl	emical:			• • • • • • • • • • • • • • • • • • •
$(\underline{})$	Cas: 7782-42-5	Code: M	RTECS #: MD96596	00 Code: M	
	Name: GRAPHITE, NATURA	L			
	% Text: <5		Environmental Wt: Other REC Limits; N/K		
	OSHA PEL: 15 MPPCF RDUST	Code: M	OSHA	Code:	
	ACGIH TLV: 2 MG/M3 RDUST; 9293	Code: M	STEL: ACGIH N/P STEL:	Code:	
	EPA Rpt Qty:		DOT Rpt Qty:		
·	Ozone Depleting Ch	emical: N			
	<b>Cas:</b> 7440-50-8	Code: M	RTECS #: GL532500	00 Code:M	
	Name: COPPER				
Ċ	% Text: 20-25		Environmental Wt: Other REC Limits: N/K		1-365

-

	OSHA PEL: 0.1MG/M3 FUME;1 DUST	Code: M	OSHA STEL:	Code:	
	ACGIN TLV: 0.2MG/M3 FUME	Code: M	ACGIH N/P STEL:	Code:	
$\bigcirc$	EPA Rpt Qty: 5000 LBS		DOT Rpt 5000 LBS Qty:		
	Ozone Depleting C	hemical: N			
	Cas:	Code: X	RTECS #: 1003951SD	Code: M	
	Name: SILICON DIOXIDE				
	% Text: <5		Environmental Wt: Other REC Limits: N/K		
	OSHA PEL: 10 MG/M3 (MFR)	Code: M	OSHA	Code:	
	ACGIH TLV: 10 MG/M3 (MFR)	Code: M	STEL: ACGIH N/P STEL:	Code:	
	EPA Rpt Qty:		DOT Rpt Qty:		
. <u></u>	Ozone Depleting C	hemical:	· · · · · · · · · · · · · · · · · · ·		
	Cas:	Code: X	RTECS #: 1002052AP	Code: M	
	Name: ALUMINUM PASTE				
	% Text: 10-15		Environmental Wt: Other REC Limits: N/K		
	OSHA PEL: 200 PPM (MFR)	Code: M	OSHA	Code:	
	ACGIH TLV: 200 PPM (MFR)	Code: M	STEL: ACGIH N/P STEL:	Code:	
	EPA Rpt Qty:		DOT Rpt Qty:		
	Ozone Depleting Cl	hemical:			
	Healt	n Hazards E	Data	TOP	
	LD50 LC50 MixtureNO	NE SPECIFI	IED BY MANUFACTURER.		
Ra	oute Of Entry Inds - Inhalation:YES	S	Skin:YES Ingestion:YES		
	Carcinogenicity Inds - NTP:NO		IARC:NO OSHA:NO		
SOM HAS BEN	ATIVELY NON-TOXIC & NON-IR IE IRRIT. INHAL OF GRAPHITE D ALSO BEEN SHOWN TO CAUSE	RITATING. DUST HAS F REPROD E EEN SHOV	te And Chronic . PRLNGD/RPTD CONT MAY CAU BEEN SHOWN TO CAUSE PULM I FTS IN EXPTL ANIMALS BY INJ WN TO CUSE TUMORS IN EXPT A	EFTS, IT ECTION	(- 365

### **Explanation Of Carcinogenicity** NOT RELEVANT Signs And Symptions Of Overexposure $\pi$ LTH HAZ:BENEATH THE SKIN & REPRODUCTIVE EFFECTS BY HIGH DOSE INGESTION. INHALATION OF SILICON DIOXIDE DUST HAS BEEN SHOWN TO CAUSE PULMONARY EFFECTS. Medical Cond Aggravated By Exposure NONE SPECIFIED BY MANUFACTURER. **First Aid Information** TOP INGEST: INDUCE VOMITING. OBTAIN MEDICAL ATTENTION. INHAL: REMOVE TO FRESH AIR. SUPPORT BREATHING (GIVE O*2/ARTF RESP) (FP N). SKIN: WASH W/SOAP & WATER. EYE:FLUSH W/WATER FOR AT LEAST 15 MINS. GET MEDICAL ATTENTION. **Spill Release Procedures** TOP SOAK UP W/INERT ABSORBENT. **Neutralizing Agent** NONE SPECIFIED BY MANUFACTURER. TOP Waste Disposal Methods LANDFILL OR INCINERATE ACCORDING TO EPA, FEDERAL, STATE & LOCAL REGULATIONS. Handling and Storage Precautions TOP OBSERVE NORMAL SAFETY PRECAUTIONS.

Other Precautions NONE SPECIFIED BY MANUFACTURER.

Fire and Explosion Hazard Information TOP

Flash Point Method: OC

Flash Point:

Lower Limits: N/K

Flash Point Text:>300F,>149C

Autoignition Temp:

Upper Limits: N/K

Autoignition Temp Text: N/A

Extinguishing Media

CARBON DIOXIDE, FOAM & DRY CHEMICAL.

**Fire Fighting Procedures** WEAR NIOSH/MSHA APPROVED SCBA & FULL PROTECTIVE EQUIPMENT (FP N).

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Unusual Fire/Explosion Hazard

NONE KNOWN.

Respiratory Protection

Ventilation NORMAL VENTILATION IS ADEQUATE.

Protective Gloves NONE REQD. IMPERVIOUS GLOVES (FP N).

Eye Protection NONE REQD. CHEMICAL WORK GOGGLES (FP N).

Other Protective Equipment NONE SPECIFIED BY MANUFACTURER.

Work Hygienic Practices NONE SPECIFIED BY MANUFACTURER.

Supplemental Safety and Health NONE SPECIFIED BY MANUFACTURER.

Physical/Chemical Properties

HCC:

NRC/State LIC No:

Net Prop WT For Ammo: Boiling Point:

> Melt/Freeze Pt: Decomp Temp:

M.P/F.P Text: N/K Decomp Text: N/K

Vapor Pres: N/K Volatile Org Content %: Vapor Density: N/A Spec Gravity: 1.16 @ 75F

B.P. Text: >300F,>149C

VOC Pounds/Gallon: VOC Grams/Liter: PH: N/A Viscosity: N/P

Evaporation Rate & N/K Reference: Solubility in Water: NEGLIGIBLE Appearance and Odor: GRAY GREASE; PETROLEUM ODOR.

Percent Volatiles by Volume: N/K

Corrosion Rate: N/K

dtSearch 6.01 (6037)

Reactivity Data

TOP

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TOP

Stability Condition To Avoid: NO Materials To Avoid: STI	NE SPECIFIED BY MANUFACTURER.	
Hazardous Decomposition NO	N-THERMAL:NONE KNOWN. ERMAL:OXIDES OF CARBON.	
Hazardous Polymerization NO Indicator:		
Conditions To Avoid NO Polymerization:	T RELEVANT	
	Toxicological Information	TOP
Toxicological Information:N/P		
	Ecological Information	ТОР
Ecological: N/P		
м	ASDS Transport Information	TOP
Transport Information:N/P		
	Regulatory Information	TOP
Sara Title III Information: N/P		
Federal Regulatory Information: N/P State Regulatory Information: N/P		
	Other Information	TOP
Other N/P Information:		
НМ	IS Transportation Information	TOP
<b>Responsible Party Cage: 05972</b>	<b>Trans ID NO: 124287</b>	
Product ID: PERMATE MSDS Prepared Date: 06/01/1987	EX ANTI-SEIZE LUBRICANT, 133K Review Date: 03/11/1993	
MFN: 1		
Submitter: N TN	Status C CD:	
Article W/O MSDS: N	Tech Entry NOS Shipping Nm:	
Radioactivity:	Form:	
Net Explosive Weight:		
Coast Guard AMMO Code:	Magnetism: N/P	

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Net Unit Weight: DOD Exemption NUM: AF MMAC Code: Z Limited Quantity IND:

Multiple KIT Number: 0 Kit Part IND: N

Kit IND: N Review IND: Y

Unit Of Issue: NK

Container QTY: NK

Type Of Container:

Additional Data: NOT REGULATED FOR TRANSPORTATION

**Detail DOT Information** 

TOP

DOT PSN Code: ZZZ

Symbols: N/R

UN ID Num: N/R

DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION DOT PSN Modifier;

Hazard Class: N/R DOT Packaging Group: N/R

Label: N/R Special Provision: N/R Packaging Exception: N/R

> Non Bulk Pack: N/R Max Qty Pass: N/R

Bulk Pack: N/R Max Qty N/R Cargo:

Vessel Stow Rcq: N/R Water/Ship/Other Req: N/R

**Detail IMO Information** 

TOP

IMO PSN Code: ZZZ

IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION IMO PSN Modifier:

IMDG Page Number: N/R UN Hazard Class: N/R UN Number: N/R IMO Packaging Group: N/R

Subsidiary Risk Label: N/R EMS Number: N/R

MED First Aid Guide NUM: N/R

**Detail IATA Information** 

TOP

IATA PSN Code: ZZZ

IATA UN ID NUM: N/R

#### IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION

IATA PSN Modifier:

IATA UN Class: N/R

Subsidiary Risk N/R Class:

IATA Label: N/R UN Packing Group: N/R

Packing Note Passenger: N/R

Max Quant Pass: N/R Packaging Note Cargo: N/R

Max Quant Cargo: N/R Exceptions: N/R

Detail AFI Informati	on
----------------------	----

AFI PSN Code: ZZZ

AFI Symbols:

AFI UN ID NUM: N/R

AFI Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION AFI PSN Modifier:

AFI Hazard Class: N/R AFI Packing Group: N/R

AFI Label: N/R Special Provisions: N/A

**Back Pack Reference: N/A** 

HMIS HAZCOM Label

<u>TOP</u>

TOP

Product ID: PERMATEX ANTI-SEIZE LUBRICANT, 133K

Cage: 05972

Assigned IND: N

Company Name: LOCTITE CORPORATION Street: 1001 TROUT BROOK CROSSING

PO Box:

City: ROCKY HILL Country: US

Zipcode: 06067-3910

Health Emergency Phone: 216-475-3600 OR 800-321-9188

State: CT

Label Required IND: Y Status Code: C Label Date: 12/23/1991

Origination Code: G Eye Protection IND: YES

Signal Word: CAUTION

Health Hazard: Slight Contact Hazard: Slight Date Of Label Review: 12/23/1991 MFG Label NO: Year Procured: N/K

Chronic Hazard IND: N Skin Protection IND: YES

**Respiratory Protection IND: YES** 

1-365

#### Hazard And Precautions VOID STRONG OXIDIZERS. ACUTE: INGESTION MAY BE RELATIVELY NON-TOXIC. PROLONGED OR REPEATED CONTACT; MAY CAUSE SOME IRRITATION. CHRONIC: NONE LISTED BY MANUFACTURER.

This information is derived from the Hazardous Material Information System which is utilized by the U.S. Department of Defense. IntraWEB, LLC and its Distributors in no manner whatsoever, expressly or implied warrants, states, or intends said information to have any application use or viability by or to any person or persons. Any person utilizing this information should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation.

#### MATERIAL SAFETY DATA SHEET

#### SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Trade Name:	TFE Paste
Part Numbers Covered:	See Section 16.
Product Use:	Pure white thread lubricant and sealant for plastic or metal threads in heavy duty applications.
Formula:	See Section 3.
Synonyms:	Pipe thread compound.
Firm Name &	William H. Harvey Company
Mailing Address:	4334 South 67 th Street
	Omaha, NE 68117-1019 http://www.wmharvey.com
Emergency Phone	For chemical transportation emergencies ONLY, call CHEMTREC at
Numbers:	(800)424-9300. Outside the U.S. (703)527-3887.
Information Telephone Number:	(800)228-9681
•	Technical Dept.
Prepared By: Contact:	Information telephone number – (800) 228-9681
Preparation Date:	January 8, 2010
r reparation Date.	

#### **SECTION 2**

#### HAZARDS IDENTIFICATION

Emergency Overview:

Thick, white paste with a petroleum odor. May cause mild irritation to the eye and skin. Inhalation of vapors may cause respiratory tract irritation, and possible dizziness. Long term inhalation of dust may cause silicosis or cancer.

Potential Health Effects:

Skin:	Irritation, including redness and dryness.		
Eyes:	May cause mechanical irritation, redness, tearing, and blurred vision.		
Inhalation:	Vapors may cause irritation to mucous membranes and the respiratory system. Headache, dizziness. Long term inhalation of dust may cause silicosis or cancer.		
Ingestion:	May cause irritation to the mouth and throat.		

OSHA Hazard Classification:

Irritant, target organ effects

SECTION 3	COMPOSITION/INFORMATION ON INGREDIENTS		
INGREDIENTS:		<u>% wt/wt:</u>	CAS NUMBER:
Calcium Carbonate		50 – 70%	1317-65-3
Oxidized Soy Bean Oil		10 – 30%	68152-81-8
Polytetrafluoroethylene		3 – 7%	9002-84-0
2-Butoxyethanol		3 – 7%	111-76-2
Titanium Dioxide		1 – 5%	13463-67-7
Ethoxylated Nonylphenol		1 – 5%	9016-45-9
Alkyl Quaternary Ammon	um Bentonite	1 – 5%	68953-58-2
Crystalline Silica, quartz		< 1.2%	14808-60-7

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			Fage. 2015				
<b>SECTION 4</b>	FIRST AID MEASURES						
	CALL TOLL FREE 1-877-740-5015						
Skin:	Remove contaminated clothing. Wa poison control center if irritation dev	Remove contaminated clothing. Wash thoroughly with soap and water. Call a physician or					
Eyes:	Remove contact lenses if any. Rinse	Remove contact lenses if any. Rinse eyes with water for 15 minutes. Get medical attention if					
Inhalation:	Move to fresh air. If breathing is diffi	rritation develops. Nove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.					
Ingestion:	Keep victim quiet and warm. Call a poison control center or physician if symptoms persist. <b>NEVER</b> give anything by mouth if victim is unconscious. Have victim rinse mouth thoroughly with water. <b>DO NOT INDUCE VOMITING</b> . If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Call the Poison Control Center at 1-877-740-5015.						
<b>SECTION 5</b>	FIRE FIGHTING MEASURE	-8					
Extinguishing							
Special Fire F			tained breathing apparatus and full				
Procedures:	protective clothing for fires	in areas where chemica	lls are used or stored.				
Unusual Fire							
Explosion Ha	zaros:						
<b>SECTION 6</b>	ACCIDENTAL RELEASE N	<b>IEASURES</b>					
Spill or Leak		Pick up released product with appropriate implements and return to original container					
Procedures:			ntainers for disposal. Appropriate				
		nent cited in Section 8 sh	nould be worn during all clean-up				
	operations.						
SECTION 7	HANDLING AND STORAG	E					
Handling:		Avoid contact with eyes, skin, or clothing. Do not take internally. Avoid breathing					
0	vapors or fumes. Use only with adequate ventilation. Wash thoroughly after handlir						
	•	en not in use. Handle wi	th care. Keep out of reach of				
Storage:	children. Store in original, labeled co	ontainar					
Other:	Containers, even empty, w		v be harmful				
o thor.			y so hannai.				
<b>SECTION 8</b>	EXPOSURE CONTROLS/P		N				
INGREDIENT		ACGIH TLV TWA	<u>OSHA PEL TWA</u>				
Calcium carbo	onate 1317-65-3	10 mg/m ³ (<1%	15 mg/m ³ (total dust)				
2 hutoxyothar	nol 111-76-2	crystalline silica)	5 mg/m ³ (respirable)				
2-butoxyethar Titanium dioxi		20 ppm 10 mg/m³	50 ppm 15 mg/m ³ (total dust)				
Crystalline sili		$0.025 \text{ mg/m}^3$	$10 \text{ mg/m}^3 / \% \text{SiO}_2$				
,		Ŭ	0 2				
Ventilation:		Good general ventilation (equivalent to outdoors) should be adequate for normal use.					
		For operations where the TLV may be exceeded, mechanical ventilation such as local					
Pospiratory		exhaust may be needed to maintain exposure levels below applicable limits.					
Respiratory For operations where the TLV may be exceeded, a NIOSH approved parti Protection: organic vapor respirator or supplied air respirator is recommended. Equip							
		selection depends on contaminant type and concentration, select in accordance with					
	29 CFR 1910.134 and goo	d industrial hygiene prac	ctice. For firefighting, use self-				
<b>-</b> ··· -	contained breathing appar						
Skin Protectio	on: Normally not needed I au	Normally not needed I aunder soiled clothing before re-use					

Normally not needed. Launder soiled clothing before re-use. Skin Protection: Eye Protection: Other: Safety glasses with sideshields or safety goggles. Eye wash and safety shower should be available.

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#### SECTION 9

#### PHYSICAL AND CHEMICAL PROPERTIES

Flashpoint / Method: Flammability: Boiling Point: Melting Point: Vapor Pressure: Vapor Density: Volatile Components: Solubility In Water: pH: Specific Gravity: Evaporation Rate: Appearance: Odor: Will Dissolve In: Material Is:

# > 145 Degrees F (62 Degrees C). (Estimated) LEL = Not determined, UEL = Not determined. Not determined. Not determined. (Air = 1) Greater than 1. Not determined. Negligible. Not applicable. 1.74 @ 20 Degrees C. Not applicable. Thick white paste. Petroleum odor. Not determined. Paste.

### **SECTION 10**

## STABILITY AND REACTIVITY

Stability:	Stable.
Conditions To Avoid:	None.
Hazardous	Hydrocarbons, aldehydes, smoke, carbon monoxide, carbon dioxide. Oxides of
Decomposition	nitrogen, titanium, calcium. Small amounts of hydrogen fluoride may evolve at very
Products:	high temperatures.
Incompatibility/	Strong oxidizing agents, strong acids.
Materials To Avoid:	
Hazardous	Will not occur.
Polymerization:	

## SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation:	may contain crystalline silica	e, dizziness, and irritation to mucous membranes. Dust a. Long term inhalation may cause silicosis or cancer.
	<b>e</b>	uct may liberate fine particulate fume, which if inhaled, can
		r, a temporary flu-like condition.
Skin:	Contact may cause mild irrit	
Eye:	Vapors or fumes may cause	e redness and irritation.
Ingestion:	May cause irritation.	
Toxicity Data:	2-Butoxyethanol:	Oral LD50 (rat): 1,746 mg/kg.
	-	Dermal LD50 (rabbit): 435 mg/kg.
		Inhalation LC50 (mouse): 7h: 700ppm.
	Calcium Carbonate:	Oral LD50 (rat): 6,450 mg/kg.
	Nonylphenol ethoxylate:	Oral LD50 (rat): 3,310 mg/kg.
Sensitization:		e known to cause sensitization.
Carcinogenicity:	•	IARC as a Group 1 carcinogen (carcinogenic to humans).
5 ,		as a suspect human carcinogen (A2). Titanium dioxide is
		B carcinogen (possibly carcinogenic to humans) and
		e as A4 (not classifiable as a human carcinogen).
Mutagenicity:		ve been found to be mutagenic.
Reproductive	•	e known to cause adverse reproductive effects.
Toxicity:		
Medical Conditions	Persons with pre-existing sk	in or lung disorders may be at increased risk from
Aggravated By	exposure to this product.	an or rang disorders may be at moreased how nom
Exposure:		

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SECTION 12	ECOLOGICAL INFORMATION		
Acute Aquatic	2-Butoxyethanol:	24 h LC50 (goldfish): 1,650 - 1700 mg/l.	
Effects Data:		96 h LC50 (fathead minnow): 2137 mg/l.	
		24 h LC50 (daphnia): 1,850 mg/l.	
		48 h LC50 (daphnia): 835 mg/l.	
VOC Information:	This product emits VOC's (Volatile Organic Compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.		
VOC Content:	87 grams/liter Per Method 94515(b) of Title 17 of the California Code of		
VOC Content.	or grams/iter	Regulations.	
SECTION 13	DISPOSAL CON	SIDERATIONS	
Waste Disposal:	Dispose of in accordance with federal, state, and local regulations It is the responsibility of the end-user to determine at the time of disposal of the product.		
EPA Hazardous Waste Number:		None.	

EPA Hazardous Waste Number:None.EPA Hazard Waste Class:None.

## SECTION 14 TRANSPORT INFORMATION

## DOT

IMDGProper Shipping Name:Not regulated.Hazard Class/Packing Group:None.UN/NA Number:None.Hazard Labels:None.	
SECTION 15         REGULATORY INFORMATION           Hazard Category for Section         Acute Health, Chronic Health, Fire	
311/312: Section 302 Extremely Hazardous Substances (TPQ): Section 313 Toxic Chemicals:This product does not contain chemicals regulated under SARA Section 302. This product contains the following chemicals subject to SARA Section 313 Reporting requirements:  Chemical 2-ButoxyethanolCAS # 111-76-2% by wt. 3 - 7%	
CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be to the National Response Center. The RQ for the product, base RQ for 2-butoxyethanol (10% max) of 1 lb, is 10 lbs. <u>Chemical</u> <u>CAS #</u> <u>RQ, lbs.</u> 2-Butoxyethanol 111-76-2 * A statutory RQ of one pound was assigned. No final RQ has assigned to the broad class of glycol ethers.	ed on the
Many states have more stringent release reporting requiremen spills required under federal, state and local regulations. California Proposition 65: This product may contain a small quantity of crystalline silica a tetrafluoroethylene, which are known to the State of California cancer.	nd
TSCA Inventory: All of the components of this product are listed on the TSCA in	/entory.

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#### SECTION 15 (continued) Canadian WHMIS Classification:

Class D, Division 2, Subdivision B; B3; D1A; D2A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all

**SECTION 16** OTHER INFORMATION NFPA and HMIS: NFPA Hazard Signal Health: 2 Flammability: 2 Reactivity: 0 Special: None HMIS Hazard Signal: Health: 2* Flammability: 2 Reactivity: 0 PPE: A Part Nos. Covered by this MSDS: 090 2050 090 2055 B13185 B13202 Premier 441007 Premier 441011 Premier 441013 PV023253

the information required by the CPR.

#### Disclaimer:

The information in this MSDS was obtained from sources we believe to be reliable. However, the information is provided by the William H. Harvey Company without any warranty, express or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable. Users should make their own investigations to determine the suitability of the information or products for their particular purpose.

The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, the William H. Harvey Company does not assume responsibility and expressly disclaims liability for loss, damage or expense arising out of or in any way connected with handling, storage, use or disposal of the product.

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Part Nos.007002812602903702905340970Covered By028005028140029038090 2000441006this MSDS:	Trade Name:	Pipe Threa	ad Compound			
028010         028155         029041         090 2005         441008           028020         028198         029042         11-1014         45280           028025         028240         029043         11-1102         613570           028030         029015         029044         12030         82-100           028035         029018         029045         3400         82-101           028040         029020         029047         3410         854-2           028075         029030         029048         403451         B13179           028110         029033         029049         403469         B13184           028115         029034         029050         408099         M6112*0		028005 028010 028020 028025 028030 028035 028040 028075 028110 028115 028118	028140 028155 028198 028240 029015 029018 029020 029030 029033 029034 029035	029038 029041 029042 029043 029044 029045 029047 029048 029049 029050 029051	090 2000 090 2005 11-1014 11-1102 12030 3400 3410 403451 403469 408099 408106	441006 441008 45280 613570 82-100 82-101 854-2 B13179

Product Use:	Gray thread lubricant and sealant	for metal pipe joint threads.
Formula:	See Section 3.	
Synonyms:	Pipe joint compound.	
Firm Name &	William H. Harvey Company	
Mailing Address:	4334 South 67 th Street	
C	Omaha, NE 68117-1019	http://www.wmharvey.com
Emergency Phone	For chemical transportation emerg	encies ONLY, call CHEMTREC at
Numbers:	(800)424-9300. Outside the U.S. (	703) 527-3887.
Information		,
Telephone Number:	(800)228-9681	
Prepared By:	Technical Dept.	
Contact:	Information telephone number – (8	300) 228-9681

Preparation Date: August 1, 2010

### **SECTION 2**

#### HAZARDS IDENTIFICATION

Emergency Overview:

Thick, gray paste with a petroleum odor. May cause mild irritation to the eye and skin. Long term inhalation of dust may cause silicosis or cancer.

Potential Health Effects:

Skin:	May cause mild irritation to the skin, including redness and dryness.
Eyes:	May cause mechanical irritation, redness, tearing and blurred vision.
Inhalation:	Long term inhalation of dust may cause silicosis or cancer.
Ingestion:	May cause irritation to the mouth and throat.

OSHA Hazard Classification:

Irritant, target organ effects.

SECTION 3	COMPOSITION/INFORMATION ON INGR	REDIENTS
INGREDIENTS:	<u>% wt/wt:</u>	CAS NUMBER:
Calcium Carbonate	50 – 70%	1317-65-3
Naphthenic Oil	10 – 30%	64742-53-6
Linseed Oil	5 – 10%	8001-26-1
Crystalline Silica, quartz	< 1.4%	14808-60-7

SECTION 4		
Skin: FOR FIRST AID HELP CALL TOLL FREE 1-877-740-5015 Remove contaminated clothing. Wash thoroughly with soap and water. Call a physician or poison control center if irritation develops.		
Eyes: Remove contact lenses if any. Rinse eyes with water for 15 minutes. Get medical attention if irritation develops.		
Inhalation: Move Keep	to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. victim quiet and warm. Call a poison control center or physician if symptoms persist.	
Ingestion: <b>NEVER</b> give anything by mouth if victim is unconscious. Have victim rinse mouth thoroughly with water. <b>DO NOT INDUCE VOMITING</b> . If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Call the Poison Control Center at 1-877-740-5015.		
SECTION 5 Extinguishing Media: Special Fire Fighting Procedures: Unusual Fire and Explosion Hazards:	<b>FIRE FIGHTING MEASURES</b> Use dry chemical, CO2, water, or foam extinguisher. Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored. None known.	
SECTION 6 Spill or Leak Procedures:	ACCIDENTAL RELEASE MEASURES Pick up released product with appropriate implements and return to original container if reusable. If not reusable, place in appropriate containers for disposal. Appropriate personal protective equipment cited in Section 8 should be worn during all clean-up operations.	
SECTION 7 Handling: Storage:	HANDLING AND STORAGE Avoid contact with eyes, skin, or clothing. Do not take internally. Avoid breathing dust. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed when not in use. Handle with care. Keep out of reach of children. Store in original, labeled container.	
Other:	Containers, even empty, will retain residue and may be harmful.	
SECTION 8 INGREDIENTS:	EXPOSURE CONTROLS/PERSONAL PROTECTION <u>CAS NUMBER:</u> <u>ACGIH TLV TWA</u> <u>OSHA PEL TWA</u>	
Calcium carbonate	1317-65-3 10 mg/m ³ (<1% 15 mg/m ³ (total dust) crystalline silica) 5 mg/m ³ (respirable)	
Naphthenic oil	64742-53-6 5 mg/m ³ 5 mg/m ³ 10 mg/m ³ (STEL)	
Crystalline silica	14808-60-7 0.025 mg/m ³ 10 mg/m ³ / %SiO ₂	
Ventilation:	Good general ventilation (equivalent to outdoors) should be adequate for normal use. For operations where the TLV may be exceeded, mechanical ventilation such as local exhaust may be needed to maintain exposure levels below applicable limits.	
Respiratory Protection:	For operations where the TLV may be exceeded, a NIOSH approved particulate respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.	
Skin Protection: Eye Protection: Other:	Normally not needed. Launder soiled clothing before re-use. Safety glasses with sideshields or safety goggles. Eye wash and safety shower should be available.	

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#### **SECTION 9** PHYSICAL AND CHEMICAL PROPERTIES

Flashpoint / Method: Flammability: Boiling Point: Melting Point: Vapor Pressure: Vapor Density: Volatile Components: Solubility In Water: pH: Specific Gravity: Evaporation Rate: Appearance: Odor: Will Dissolve In: Material Is:

#### Not determined. LEL = Not determined, UEL = Not determined. Not determined. Not determined. Not determined. (Air = 1) Greater than 1. Not determined. Negligible. Not applicable. 1.68 @ 20 Degrees C. Not applicable. Thick gray paste. Petroleum odor. Not determined. Paste.

### **SECTION 10**

## STABILITY AND REACTIVITY

TOXICOLOGICAL INFORMATION

Stability:	Stable.
Conditions To Avoid:	None.
Hazardous	Hydrocarbons, aldehydes, smoke, carbon monoxide, carbon dioxide.
Decomposition	
Products:	
Incompatibility/	Strong oxidizing agents, strong acids.
Materials To Avoid:	
Hazardous	Will not occur.
Polymerization:	
	Will not occur.

#### **SECTION 11**

#### Dust may contain crystalline silica. Long term inhalation may cause silicosis or Inhalation: cancer. Skin: Contact may cause mild irritation. Vapors or dust may cause redness and irritation. Eve: May cause irritation. Ingestion: Toxicity Data: Calcium Carbonate: Oral LD50 (rat): 6,450 mg/kg. None of the components are known to cause sensitization. Sensitization: This product contains greater than 0.1% crystalline silica. Crystalline silica is listed by Carcinogenicity: IARC as a Group 1 carcinogen (carcinogenic to humans). ACGIH lists crystalline silica as a suspect human carcinogen (A2). Mutagenicity: None of the components have been found to be mutagenic. Reproductive None of the components are known to cause adverse reproductive effects. Toxicity: Medical Conditions Persons with pre-existing skin or lung disorders may be at increased risk from exposure to this product. Aggravated By Exposure:

## SECTION 12

## **ECOLOGICAL INFORMATION**

Acute Aquatic Effects Not data available. Data:

## 

DISPOSAL CONSIDERATIONS
Dispose of in accordance with federal, state, and local regulations.
It is the responsibility of the end-user to determine at the time of
disposal of the product.
e Number: None.
ass: None.

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#### **SECTION 14** TRANSPORT INFORMATION

DOT Proper Shipping Name: Hazard Class/Packing Group: UN/NA Number: Hazard Labels:	Not regulated. None. None. None.
IMDG Proper Shipping Name: Hazard Class/Packing Group: UN/NA Number: Hazard Labels:	Not regulated. None. None. None.
Hazard Category for Section	RY INFORMATION Acute Health, Chronic Health
311/312: Section 302 Extremely Hazardous Substances (TPQ): Section 313 Toxic Chemicals:	This product does not contain chemicals regulated under SARA Title III, Section 302. This product does not contain any chemicals subject to SARA Title III Section 313 Reporting requirements.
CERCLA 103 Reportable Quantity:	This product does not contain chemicals regulated under CERCLA.
California Proposition 65: TSCA Inventory: Canadian WHMIS Classification:	Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations. This product may contain a small quantity of crystalline silica which is known to the State of California to cause cancer. All of the components of this product are listed on the TSCA inventory. Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.
SECTION 16 OTHER INFO	DRMATION

#### NFPA Hazard Signal Health: 1 Flammability: 1 Reactivity: 0 Special: None HMIS Hazard Signal: Health: 1* Flammability: 1 Reactivity: 0 PPE: A

Disclaimer:

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The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, the William H. Harvey Company does not assume responsibility and expressly disclaims liability for loss, damage or expense arising out of or in any way connected with handling, storage, use or disposal of the product.



## **United Elchem Industries**

#### MATERIAL SAFETY DATA SHEET

MSDS Number:	4402E
Section 1	PRODUCT AND COMPANY IDENTIFICATION
Trade Name:	PLASTI-WELD PURPLE PRIMER NSF LISTED
Product Nos.:	90366S, 90356S, 90346S, 90336S, 90324
Product Use:	Primer for PVC and CPVC Plastic Pipe
Formula:	See section 2
Synonyms:	Plastic Pipe Primer
Firm Name &	United Elchem Industries UNITED ELCHEM IND. c/o OATEY CO. 4700 West 160th
Address:	Street, P.O. Box 35906 Cleveland, Ohio 44135
	www.elchem.com
Firm Phone No:	
Emergency Phone	For Emergency First Aid call 1-877-740-5015. For chemical transportation
Nos.:	emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-
	703-527-3887.
Prepared by:	Technical Department
Preparation Date:	11/01/2009

#### Section 2 HAZARDS IDENTIFICATION

Emergency Overview: Purple or Clear

liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

#### Section 3 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS:	%wt∕wt ∶	CAS NUMBER:	ACGIH TLV TWA:	OSHA PEL TWA	OTHER:
Tetrahydrofuran	15 - 30%	109-99-9	50 ppm(skin)	200 ppm	25 ppm (Mfg)
			100 ppm STEL		
Methyl Ethyl Ketone	25 - 40%	78-93-3	200 ppm	200 ppm	None
			300 ppm		
Acetone	25 - 40%	67-64-1	500 ppm	1000 ppm	None
			750 ppm STEL		
Cyclohexanone	15 - 30%	108-94-1	20 ppm(skin)	50 ppm	None
-			50 ppm STEL		

OSHA Hazard Classification:

Flammable, irritant, organ effects

#### Section 4 FIRST AID MEASURES

Skin:	Remove contaminated clothing immediately. Wash all exposed areas with soap and
	water. Get medical attention if irritation develops. Remove dried cement with
	hand cleaner or baby oil.
Eyes:	If material gets into eyes or if fumes cause irritation, immediately flush eyes
	with plenty of water until chemical is removed. If irritation persists, get
	medical attention immediately.
Inhalation:	If symptoms of exposure develop, remove to fresh air. If breathing becomes
	difficult, administer oxygen. Administer artificial respiration if breathing

has stopped. Seek immediate medical attention.

Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

#### Section 5 FIRE FIGHTING MEASURES

Flashpoint / 14 - 23 Degrees F. (-10 to -5 Degrees C) / CCCFP Method: Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume Extinguishing Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container Media: with water. Water may be ineffective as an extinguishing agent. Special Fire Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or Fighting Procedure: stored Unusual Fire Extremely flammable liquid. Keep away from heat and all sources of ignition And Explosion including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may Hazards: travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age. Combustion will produce toxic and irritating vapors including carbon monoxide, Hazardous Decomposition carbon dioxide and hydrogen chloride. Products:

#### Section 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak Remove all sources of ignition and ventilate area. Stop leak if it can be done Procedures: without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other noncombusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 13 for disposal information.

#### Section 7 HANDLING AND STORAGE

- Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.
- Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
- Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

#### Section 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

- Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.
- Respiratory For operations where the exposure limit may be exceeded, a NIOSH approved Protection: For operations or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Skin Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Eye Safety glasses with side shields or safety goggles.

Protection:

#### Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	151 Degrees F / 66 Degrees C
Melting Point:	Not applicable
Vapor Pressure:	145 mmHg @ 20 Degrees C
Vapor Density:	(Air = 1) 2.5
Volatile Components:	99.96%
Solubility In Water:	Negligible
PH:	Not applicable
Specific Gravity:	0.84 +/- 0.02 @ 20 Degrees C
Evaporation Rate:	(BUAC = 1) = 5.5 - 8.0
Appearance:	Purple or Clear Liquid
Odor:	Ether-Like
Will Dissolve In:	Tetrahydrofuran
Material Is:	Liquid

	TABILITY AND REACTIVITY
Stability: Conditions To	Stable.
Avoid:	Avoid heat, sparks, flames and other sources of ignition.
Hazardous	Combustion will produce toxic and irritating vapors including carbon
Decomposition	monoxide, carbon dioxide and hydrogen chloride.
Products:	
Incompatibility/	Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds,
Materials To	chlorinated inorganics (potassium, calcium and sodium hypochlorite) and
Avoid:	hydrogen peroxides. May attack plastic, resins and rubber.
Hazardous	Will not occur.
Polymerization:	

### Section 11 TOXICOLOGICAL INFORMATION

ry irritation, ess of breath and system depression,
nd lung damage. thyl ethyl ketone and effects similar to
rritation with
e damage. nd diarrhea. ical pneumonia and
damage to the
m3/8 hours
4 hours
n/3 hours

	Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg Inhalation rat LC50: 23,500 mg/m3/8 hours Skin rabbit LD50: 6,480 mg/kg
Sensitization: Carcinogenicity	None of the components are known to cause sensitization.
Mutagenicity:	Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.
Reproductive Toxicity:	Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.
Medical Conditions Aggravated By Exposure:	Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.
	ECOLOGICAL INFORMATION This product is not expected to be toxic to aquatic organisms. Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l. Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L. Acetone: 96 hour LC50 for fish is greater than 100 mg/L. Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.
VOC	This product emits VOC's (volatile organic compounds) in its use Make sure

VOC This product emits VOC's (volatile organic compounds) in its use. Make sure Information: that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: Maximum 550 g/L per SCAQMD Test Method 316A.

#### Section 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations. RCRA Hazardous Waste U002, U057, U159, U213 Number: EPA Hazardous Waste D001, D035, F003, F0005 ID Number: EPA Hazard Waste Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content) Number:

#### Section 14 TRANSPORT INFORMATION

DOT	Less than 1 Liter (0.3	Greater than 1 Liter (0.3
	<u>gal)</u>	<u>gal)</u>
UN/NA Number:	None	UN1993
Proper Shipping Name:	Consumer Commodity	Flammable Liquid, NOS
		(Methyl Ethyl Ketone,
		Acetone)
Hazard Class:	ORM-D	3
Packing Group:	None	PGII
Hazard Labels:	None	Flammable Liquid

IMDG		
UN Number:	UN1993	UN1993
Proper Shipping Name:	Flammable Liquid, NOS (Limited Quantity)	Flammable Liquid, NOS (Methyl Ethyl Ketone, Acetone)
Hazard Class:	3	3
Packing Group:	II	II
Label:	None (Limited Quantities are expected from labeling)	Class 3 (Flammable Liquid)
Flashpoint (deg C)	-10 to -5 Degrees C	-10 to -5 Degrees C

2008 North American Emercency Response Guidebook Number: 127

#### Section 15 REGULATORY INFORMATION

Hazard Category for Acute Health, Chronic Health, Flammable Section 311/312:

Section 302 Extremely Hazardous Substances (TPQ):	This product does not contain chemicals regulated under SARA Section 302.
Section 313 Toxic Chemicals:	This product does not contain chemicals subject to SARA Title III Section
	313 Reporting requirements.
CERCLA 103	Spills of this product over the RQ (reportable quantity) must be reported
Reportable	to the National Response Center. The RQ for the product, based on the RQ
Quantity:	for Tetrahydrofuran (30% maximum) of 1,000 lbs, is 3,333 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
California	This product does not contain any chemicals subject to California
Proposition 65:	Proposition 65 regulations.
TSCA Inventory Canadian WHIMS Classification:	All of the components of this product are listed on the TSCA inventory. Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.
Section 16 NFPA and HMIS:	OTHER INFORMATION

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

Template: tmpl-us-e1



## MSDS No. 12502 Trade Name: PLATINUM DD* Revision Date: 02/21/2011 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name:	PLATINUM [	PLATINUM DD*			
Chemical Family: Product Use:	Mixture Drilling fluid a	Mixture Drilling fluid additive. Wetting agent.			
Supplied by:	M-I L.L.C. P.O. Box 428 Houston, TX www.miswac	77242			
Telephone Number:	281-561-151	1			
Emergency Telephone (2	<b>24 hr.):</b> 281-561-160	0			
Prepared by:	Product Safe	ety Group			
Revision No.	3				
HMIS Rating Health: 2	Flammability: 1	Physical Hazard: 0	PPE:	J	

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

## 2. HAZARDS IDENTIFICATION

Emergency Overview:	Warning! May cause severe eye irritation. May cause skin and respiratory tract irritation.			
Canadian Classification: UN PIN No: Not regulated.	WHMIS Class: D2B			
Physical State: Liquid	Color: Light red Odor: Citrus Lemon			
Potential Health Effects: Acute Effects Eye Contact: Skin Contact: Inhalation: Ingestion:	May cause severe eye irritation. May be irritating to the skin. Prolonged or repeated contact may cause defatting of the skin and/or dermatitis (inflammation). Vapors or mists may be irritating to the respiratory tract. May cause gastric distress, nausea and vomiting if ingested.			
Carcinogenicity & Chronic Effects: Routes of Exposure: Target Organs/Medical Conditions Aggravated by Overexposure:	See Section 11 - Toxicological Information. Eyes. Dermal (skin) contact. Inhalation. Eyes. Skin. Respiratory System.			

Trade Name: PLATINUM DD*

MSDS No. 12502

## Revision Date: 02/21/2011

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Non-hazardous component		60 - 100	No comments.
Alkanolamide		1 - 5	No comments.
Tetrapotassium	7320-34-5	1 - 5	No comments.
Pyrophosphate			
Anionic surfactant		1 - 5	No comments.
Sulfate of ethoxylated alcohol		1 - 5	No comments.

## 4. FIRST AID MEASURES

Eye Contact:	Promptly wash eyes with lots of water while lifting eye lids. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.				
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.				
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.				
Ingestion:	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mout to an unconscious person. If signs of irritation or toxicity occur seek medical attention.				
General notes:	Persons seeking medical attention should carry a copy of this MSDS with them.				

## 5. FIRE FIGHTING MEASURES

#### Flammable Properties

Flash Point: F (C):>200F (93C)Flash Point Method:EstimatedFlammable Limits in Air - Lower (%): NDFlammable Limits in Air - Upper (%): NDAutoignition Temperature: F (C):Flammability Class:IIIBOther Flammable Properties:Extinguishing Media:

Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Oxides of: Carbon. Nitrogen. Phosphorous. Potassium. Sulfur.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** 

Use personal protective equipment identified in Section 8.

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Spill Procedures:	Evacuate the spill area with the exception of the spill response personnel removed and upwind of spill. Extinguish all ignition sparks, flames, heat and smoking. Shut off leak if it can be don spilled material. Do not allow spilled material to enter sewers, surface waters. Absorb in vermiculite, dry sand or earth. Plac disposal.	sources. Avoid le safely. Contain storm drains or
Environmental Precautions:	Waste must be disposed of in accordance with federal, state a	nd local laws.

## 7. HANDLING AND STORAGE

Handling:

Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid breathing vapors or spray mists. Use only in a well ventilated area. Wash thoroughly after handling.

## Storage:Store in dry, well-ventilated area. Keep container closed. Keep away from heat,<br/>sparks and flames. Store away from incompatibles. Follow safe warehousing<br/>practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Non-hazardous component		60 - 100	NA	NA	NA	None
Alkanolamide		1 - 5	NA	NA	NA	None
Tetrapotassium	7320-34-5	1 - 5	NA	NA	NA	(1)
Pyrophosphate						
Anionic surfactant		1 - 5	NA	NA	NA	None
Sulfate of ethoxylated alcohol		1 - 5	NA	NA	NA	None

#### Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable).

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

## Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

**Eye/Face Protection:** Wear chemical safety goggles.

**Skin Protection:** Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as nitrile or neoprene.

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**Respiratory Protection:** All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne mist/aerosol of this product, use at least a NIOSH-approved N95 half-mask disposable or re-usable particulate respirator. In work environments containing oil mist/aerosol, use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Light red
Odor:	Citrus Lemon
Physical State:	Liquid
pH:	9.5
Specific Gravity (H2O = 1):	1.038
Solubility (Water):	Soluble
Flash Point: F (C):	>200F (93C)
Melting/Freezing Point:	ND
Boiling Point:	212F (100C)
Vapor Pressure:	ND
Vapor Density (Air=1):	ND
Evaporation Rate:	SD
Evaporation Rate:	<1
Odor Threshold(s):	ND

## **10. STABILITY AND REACTIVITY**

Chemical Stability:	Stable
Conditions to Avoid:	Keep away from heat, sparks and flame.
Materials to Avoid:	Oxidizers.
Hazardous Decomposition	For thermal decomposition products, see Section 5.
Products:	
Hazardous Polymerization	Will not occur

## **11. TOXICOLOGICAL INFORMATION**

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	CAS No.	Acute Data
Alkanolamide		Oral LD50: 12,400 ul/kg (rat); Eye Draize Test 100 ul:
		Severe (rabbit); Skin Draize Test 300 ul: Moderate (rabbit)
Tetrapotassium Pyrophosphate	7320-34-5	Oral LD50: >1000 mg/kg (rat); Oral LDLo: 4640 mg/kg (rat);
		Dermal LD50: >4640 mg/kg (rabbit); Inhalation LC50 4H:
		>1.10 mg/l (rat)
Anionic surfactant		Oral LD50: 438 mg/kg (rat)

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 Ingredient
 Component Toxicological Summary

 Alkanolamide
 In a National Toxicology Program (NTP) 2 year carcinogenicity study of this alkanolamide, male and female rats and mice were dermally exposed at 0 - 200 mg/kg and 0 - 100 mg/kg, respectively. There was no clear evidence of carcinogenicity in rats. There was clear evidence of carcinogenicity in mice. Mutagenicity tests demonstrated mixed results. (NTP)

## Product Toxicological Information:

No toxicological data is available for this product.

## **12. ECOLOGICAL INFORMATION**

Component Ecotoxicity Data:

Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

Ingredient	CAS No.	Data
Alkanolamide		LC50 96H: 3.6 mg/l (Brachydanio rerio); EC50 24H: 4.2 mg/l
		(Daphnia magna)
Tetrapotassium Pyrophosphate	7320-34-5	LC50 96H: >100 mg/l (rainbow trout); LC50 96H: >100 mg/l
		(Mysid shrimp); EC50 48H: >100 mg/l (Daphnia magna)
Anionic surfactant		LC50 96H: 10.8 mg/l (static) (Oncorhynchus mykiss
		(rainbow trout)); LC50 96H: 6.97 mg/l (catfish)

Product Ecotoxicity Data:	
Biodegration:	
Bioaccumulation:	
Octanol/Water Partition	
Coefficient:	

ND

Contact M-I Environmental Affairs Department for available product ecotoxicity data. ND ND

## 13. DISPOSAL CONSIDERATIONS

Waste Classification:	ND
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

U.S. DOT Shipping Description:

Canada TDG Shipping Description: UN PIN No: IMDG Shipping Description: ICAO/IATA Shipping Description: Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA. Not regulated. Not regulated. Not regulated. Not regulated. Not regulated.

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## **15. REGULATORY INFORMATION**

#### U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Immediate (acute) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro. F	CA 65 Repro. M
Anionic surfactant			1000 lb				

#### International Chemical Inventories

Australia AICS - Components are listed or exempt from listing.

Canada DSL - Components are listed or exempt from listing.

China Inventory - Components are listed or exempt from listing.

European Union EINECS/ELINCS - Components are listed or exempt from listing.

Japan METI ENCS - Components are listed or exempt from listing.

Korea TCCL ECL - Components are listed or exempt from listing.

New Zealand - ND.

Philippine PICCS - Components are listed or exempt from listing.

U.S. TSCA - Components are listed or exempt from listing.

U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

#### **Canadian Classification:**

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: D2B

**16. OTHER INFORMATION** 

The following sections have been revised: 1, 5, 8, 15, 16.

#### NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

#### Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



A Schlumberger Company

## MATERIAL SAFETY DATA SHEET

## MSDS No. 12942 Trade Name: PLATINUM FOAM PLUS* Revision Date: 02/08/2012 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name:	PLATINUM I	FOAM PLUS*			
Chemical Family: Product Use:	Mixture Drilling fluid	additive.			
Supplied by: Telephone Number: Emergency Telephone (2 Prepared by:	M-I L.L.C. P.O. Box 428 Houston, TX www.miswad 281-561-150 24 hr.): 281-561-160 Product Safe	77242 co.slb.com 99			
Revision No.	1				
HMIS Rating Health: 2	Flammability: 2	Physical Hazard: 0	PPE:	J	

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

## 2. HAZARDS IDENTIFICATION

Emergency Over	view:	contact may da harmful if absor		in and respirate	vere eye irritation. Prolonged ory tract irritation. May be cause central nervous
Canadian Classi UN PIN No:	<b>fication:</b> Not regulated.		WHMIS Class:	B3 D2B	
Physical State:	Liquid	Color:	Clear	Odor:	Mild Polyether
Potential Health Acute Effects Eye Contac Skin Conta Inhalation: Ingestion:	st:	May be irritating repeated conta Vapors or mists central nervous May cause gas	ct may cause defatting of	nful if absorbed the skin and/or spiratory tract. hhaled.	d through skin. Prolonged or dermatitis (inflammation). Vapors or mists may cause
Carcinogenicity Effects:			- Toxicological Informatio		nhalation
Routes of Expos	uie.	Lyes. Dernal (	skin) contact. Dermal (skir		

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Target Organs/Medical Conditions Aggravated by Overexposure: Eyes. Skin. Respiratory System. Central Nervous System (CNS). Kidney. Blood. Liver.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Sodium salts		30 - 60	No comments.
2-Butoxyethanol	111-76-2	10 - 30	No comments.
Diethylene glycol	111-46-6	5 - 10	No comments.

**Composition Comments:** 

Component LD50 and LC50 values are provided in Section 11, if available.

## 4. FIRST AID MEASURES

Eye Contact: Skin Contact:	Look for and remove contact lenses. Flush with large amounts of water. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Do not induce vomiting. Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. Get immediate medical attention.
General notes: Notes To Physician:	Persons seeking medical attention should carry a copy of this MSDS with them. Aspiration may cause severe lung damage. Evacuate stomach in a way which avoids aspiration.

## 5. FIRE FIGHTING MEASURES

#### **Flammable Properties**

Flash Point: F (C):	142 F(61.1 C)
Flash Point Method:	PMCC
Flammable Limits in Air - Lower (%):	ND
Flammable Limits in Air - Upper (%):	ND
Autoignition Temperature: F (C):	ND
Explosion Data - Sensitivity to Mechanical Impact:	NA
Explosion Data - Sensitivity to Static Discharge:	If applicable, information is provided in Section 5 Special
	Fire-Fighting Procedures, Other Flammable Properties and
	Section 6 Spill Procedures.
Flammability Class:	IIIA
Extinguishing Media:	Water fog, carbon dioxide, foam, dry chemical.
Protection Of Fire-Fighters:	

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**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways. Note that flammable vapors may form an ignitable mixture with air. Vapors may travel considerable distances and flash back if ignited.

Hazardous Combustion Products: Peroxides. Oxides of Carbon. Sulfur.

**Conditions of Flammability:** Products are classified as flammable/combustible based on flash point as defined in the Health Canada Controlled Products Regulations, U.S. Occupational Health and Safety Administration Hazard Communication Standard and transportation regulations. See Sections 1, 2, 5, 14 and 15 for flammable/combustible classification information. Flammable/combustible materials may ignite and burn if exposed to a flame or other sources of ignition.

### Other Flammable Properties: ND

## 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Use personal protective equipment identified in Section 8.
Spill Procedures:	Evacuate the spill area with the exception of the spill response team. Keep personnel removed and upwind of spill. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Shut off leak if it can be done safely. Contain spilled material. Do not allow spilled material to enter sewers, storm drains or surface waters. Absorb in vermiculite, dry sand or earth. Place into containers for disposal. Use non-sparking or explosion proof means to transfer material to containers. Note that flammable/combustible vapors may form an ignitable mixture with air. Vapors may travel considerable distances from spill and flash back, if ignited.
Environmental Precautions:	Waste must be disposed of in accordance with federal, state and local laws. In the U.S., for products with reportable quanitity (RQ) components - if the RQ is exceeded, report to National Spill Response Office at 1 800 424 8802.

## 7. HANDLING AND STORAGE

Handling:	Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid breathing vapors or spray mists. Use only in a well ventilated area. Ground and bond containers when transferring material. Wash thoroughly after handling.
Storage:	Store in dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Sodium salts		30 - 60	NA	NA	NA	None

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Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
2-Butoxyethanol	111-76-2	10 - 30	20 ppm	50 ppm	700 ppm	Skin.
					IDLH	
					(NIOSH)	
Diethylene glycol	111-46-6	5 - 10	NA	NA	10 mg/m ³	None
					AIHA WEEL	

#### Notes

Skin - Potential for cutaneous absorption.

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

#### **Personal Protection Equipment**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

Eye/Face Protection:	Wear chemical safety goggles.		
Skin Protection:	Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as: Butyl rubber.		
Respiratory Protection:	All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent. If exposed to airborne mist/aerosol of this product, use at least a NIOSH-approved N95 half-mask disposable or re-usable particulate respirator. In work environments containing oil mist/aerosol, use at least a NIOSH-approved P95 half-mask disposable or re-usable particulate respirator. In work environments containing oil mist/aerosol, use at least a NIOSH-approved P95 half-mask disposable or re-usable particulate respirator. This product is a complex blend of ingredients. If exposed to vapors from this		
	product use a NIOSH/MSHA-approved respirator with a Multi-Contaminant cartridge.		
General Hygiene Considerations:	Work clothes should be washed separately at the end of each work day. Disposable		

## 9. PHYSICAL AND CHEMICAL PROPERTIES

clothing should be discarded, if contaminated with product.

Color: Odor: Physical State: pH: Specific Gravity (H2O = 1): Solubility (Water):	Clear Mild Polyether Liquid 6.5 - 8.5 @ 10% Aqueous Solution 1.02 - 1.06 Soluble
Flash Point: F (C):	142 F(61.1 C)
Melting/Freezing Point:	ND
Boiling Point:	ND
Vapor Pressure:	ND
Vapor Density (Air=1):	ND
Evaporation Rate:	ND
Octanol/Water Partition	ND
Coefficient:	

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Odor Threshold(s):

## **10. STABILITY AND REACTIVITY**

Chemical Stability: Conditions to Avoid: Materials to Avoid:	Stable Keep away from heat, sparks and flame. Oxidizers. Acids. Bases. Salts of bases. Aluminum. Copper. Galvanized iron and steel. Viton. Nitrile. Neoprene. Natural rubber.
Conditions of Reactivity: Hazardous Decomposition Products: Hazardous Polymerization	See Conditions and Materials to Avoid, if applicable. For thermal decomposition products, see Section 5. Will not occur

## **11. TOXICOLOGICAL INFORMATION**

## Acute Exposure Effects, Irritation and Sensitization: See Section 2.

ND

Chronic, Carcinogenicity, Reproductive Toxicity, Teratogenicity, Embryotoxicity, Mutagenicity Effects: See Component Toxicological Summary and Product Toxicological Information, if available. Synergistic Products/Effects: ND

**Component Toxicological Data:** Any adverse component toxicological effects and acute toxicity values (LD50s, LC50s) are listed below. If no effects or acute values are listed for components, no such data were identified.

Ingredient	CAS No.	Acute Data
Sodium salts		Oral LD50: 2310 mg/kg (rat); Dermal LD50: 6300 mg/kg (rabbit)
2-Butoxyethanol	111-76-2	Oral LD50: 470 - 917 mg/kg (rat), 1.4 g/kg (guinea pig) Dermal LD50: 220 - 400 mg/kg (rat), >2 g/kg (guinea pig) Inhalation LD50: 450 ppm/4H (rat), 290 mg/m³/7H (rat), >633 ppm/1H (guinea pig) Guinea pig acute data expected to be more relevant to humans. (Vendor MSDS)
Diethylene glycol	111-46-6	Oral LDLo: 1.0 g/kg (human); Oral LD50: 12.5 g/kg (rat); Dermal LD50: 11.9 g/kg (rabbit)

Ingredient	Component Toxicological Summary
2-Butoxyethanol	2-Butoxyethanol is acutely toxic to animals via skin absorption and inhalation. This toxicity is primarily due to the hemolytic effects (destruction of red blood cells) of a metabolite of 2BE (2-butoxy acetic acid). Based on human studies, man is much less susceptible to this acute toxic effect. (ACGIH) The National Toxicology Program (NTP, 1998) has conducted lifetime inhalation bioassays in rats and mice at concentrations up to 125 ppm and 250 ppm 2-butoxyethanol, respectively. NTP found no evidence of carcinogenic activity in male rats, equivocal (inconclusive) evidence in female rats based on adrenal tumors and some evidence in males and female mice based on liver and forestomach tumors. NTP concluded that the potential of 2-butoxyethanol to cause cancer in humans cannot be determined at this time. Inhalation of 2-butoxyethanol by pregnant rabbits caused some deaths at 200 ppm. No effects to the pregnant rabbits were noted at 100 ppm and below. In another inhalation study in pregnant rats, irritancy was noted in the rats and a related fetoxicity was observed at 100 and 200 ppm. There were no effects observed at 50 ppm and below. Birth defects were not noted in either study. Exposure of rats by inhalation to 2-butoxyethanol caused hemoloysis (destruction of red blood cells), blood in the urine and a slight increase in liver weight. Other species, including man, seem much less sensitive to the hemolytic effects. (Vendor MSDS)

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 Ingredient
 Component Toxicological Summary

 Diethylene glycol
 This glycol caused kidney and liver toxicity in rats when fed orally for two years at 1% and 4% of the diet. (HSDB) Humans are more sensitive to this component than animals. The toxic dose for an adult human is estimated to be 3 - 4 ounces (1/2 cup). (Vendor MSDS) Teratogenicity (toxicity to the fetus) was evaluated in Dutch rabbits exposed to 0, 100, 250 and 450 ppm of this glycol by inhalation. Adverse effects were noted in the mother (decreased body weight and food consumption) and in the fetus at 100 and 450 ppm. (HSDB) Mice exposed to high concentrations of this glycol in drinking water showed some reproductive effects at levels that also caused reduced maternal weight. Developmental toxicity (decreased fetal weight, but no birth defects) was noted in pregnant mice exposed to levels that also caused maternal toxicity. (Vendor MSDS)

Product Toxicological Information: No toxicological data is available for this product.

## **12. ECOLOGICAL INFORMATION**

### **Component Ecotoxicity Data:**

Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

Ingredient	CAS No.	Data
Sodium salts		EC50 48H: 4,140 - 4,950 ug/L (Ceriodaphnia dubia (water flea))
2-Butoxyethanol	111-76-2	LC50 96H: 1490 mg/L (static) (Lepomis macrochirus) (bluegill); LC50 24H: 1650 mg/L (Carassius auratus) (goldfish); LC50 24H: 1720 mg/L (Daphnia magna) (water flea)
Diethylene glycol	111-46-6	LC50 96H: 75,200 mg/l (fathead minnow); LC50 96H: >1000 mg.l (Lepomis macrochirus (bluegill sunfish)); LC50 7D: 61,100 mg/l (Poecilia retiaculata (guppy)); EC50 15M: 29,228 mg/l (Photobacterium phosphoreum); NOEC 7D: 100 mg/l (Selenastrum capricornutum (green algae)); LC50 96H (static): 0.3 mg/l and EC50 48H: 84,000 mg/l (water flea); NOEC 24H: 2500 mg/l (activated sludge, bacteria)

Product Ecotoxicity Data:	Contact M-I Environmental Affairs Department for available product ecotoxicity data.
Biodegration:	ND
Bioaccumulation:	ND

## **13. DISPOSAL CONSIDERATIONS**

Waste Classification:	ND
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

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U.S. DOT Shipping Description:

Emergency Response Guide No.: Packaging Authorizations: Canada TDG Shipping Description: UN PIN No: IMDG Shipping Description: ICAO/IATA Shipping Description: Not regulated under TDG, IMDG, ICAO/IATA. Not regulated for U.S. ground transport in non-bulk containers (<119 gallons). When shipped in U.S. in bulk containers, NA1993, Combustible liquid, n.o.s., (contains 2-butoxyethanol), PG III. 128 49 CFR 173.150, 173.203, 173.241 Not regulated. Not regulated. Not regulated. Not regulated. Not regulated.

## **15. REGULATORY INFORMATION**

U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Fire hazard. Immediate (acute) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

#### **International Chemical Inventories**

Australia AICS - Components are listed or exempt from listing.
Canada DSL - Components are listed or exempt from listing.
China Inventory - Components are listed or exempt from listing.
Japan METI ENCS - Components are listed or exempt from listing.
European Union EINECS/ELINCS - Components are listed or exempt from listing.
Korea TCCL ECL - Components are listed or exempt from listing.
New Zealand - Components are listed or exempt from listing.
Philippine PICCS - Components are listed or exempt from listing.
U.S. TSCA - Components are listed or exempt from listing.
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

#### **Canadian Classification:**

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: B3 D2B

## **16. OTHER INFORMATION**

The following sections have been revised: 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 16.

#### NA - Not Applicable, ND - Not Determined.

#### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

Trade Name: PLATINUM FOAM PLUS*

MSDS No. 12942

**Revision Date:** 02/08/2012

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#### Revision Date: 2010-01-20 10:25:13

#### I. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	POLAR RECREATIONAL VEHICLE ANTIFREEZE		
Product Code:	PO06AFD5		
Emergency Phone:	(800) 424-9300 (202) 483-7616 (CHEMTREC)		
Poison Control Center:	(800) 222-1222		
Company:	Warren Distribution, Inc. 727 S. 13th St. Omaha, NE 68102		
Information Phone: Revision Number:	(800) 825-1235 10	(402) 341-9397	

#### II. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%	CAS #	OSHA Exposure Limits
Propylene glycol	10 - 30	57-55-6	No PEL established
Acid Red 52	0.001- 0.01	3520-42-1	No PEL established
Components not listed are not physical or healt	h hazards as def	fined in 29 CFR 19	910.1200 (Hazard Communication
Standard).			

## III. HAZARDS IDENTIFICATION

Routes of Entry:	Inhalation, Ingestion, Skin contact, Eye contact
Medical Conditions Aggravated	No medical conditions affected by exposure.
by Exposure:	

#### Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and
	headache. Moderately irritating to respiratory tract.
Inhalation Toxicity:	Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Skin Absorption:	No absorption hazard in normal industrial use.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.
Ingestion Toxicity:	Negligible.

#### Long-Term (Chronic) Health Effects:

Reproductive and	No data available to indicate product or any components present at greater than
<b>Developmental Toxicity:</b>	0.1% may cause birth defects. Possible birth defect hazard based on animal
	data.
Mutagenicity:	No data available to indicate product or any components present at greater than
	0.1% is mutagenic or genotoxic.
Inhalation:	Upon prolonged and/or repeated exposure to concentrations above permissible
	exposure limits, can cause moderate respiratory irritation, dizziness, weakness,
	fatigue, nausea and headache.
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation,
	defatting, and dermatitis. Not likely to cause permanent damage.
Skin Absorption:	Upon prolonged or repeated exposure, no hazard in normal industrial use.



## Material Safety Data Sheet

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HMIS Ratings:				
Health:	2			
<b>Reactivity:</b>	0			
PPE:	В			
0 - Least	1 - Slight	2 - Moderate	3 - High	4 - Extreme

## IV. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.
Skin Contact:	Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Provide medical care provider with this MSDS.
Notes to Doctor:	No additional first aid information available

## V. FIRE FIGHTING MEASURES

Fire and/or Explosion Hazards:	Empty containers that retain product residue (liquid, solid/sludge, or vapor) can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose container to heat, flame, sparks, static electricity, or other sources of ignition. Any of these actions can potentially cause an explosion that may lead to injury or death.	
Fire Fighting Methods and Protection:	Will not burn, no special instructions available. Use methods appropriate for surrounding materials. Use methods for the surrounding fire.	
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide	
Flash Point:	99 deg. C, [ 210 deg. F ]	

#### VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Methods for Clean-up:	Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill. Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section VIII at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.
VII. HANDLING AND STORAGE	
Handling Technical Measures and Precautions:	Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Empty containers may



## **Material Safety Data Sheet**

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retain product residues/ vapors. Use proper bonding and grounding during bulk product transfer. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Avoid contact with material, avoid breathing dusts or fumes, use only in a well ventilated area. Wash thoroughly after handling Do not get in eyes, on skin and clothing Keep in air-tight containers- material is hygroscopic. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous.

**Storage Technical Measures and Conditions:** 

## Store in a cool dry place Store in a tightly closed container Do not store near combustible materials

#### VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:	No exposure limits exist for the constituents of this product. Use local exhaust ventilation or other engineering controls to minimize exposures and maintain operator comfort. Engineering controls must be designed to meet the OSHA chemical specific standard in 29 CFR 1910. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits
Respiratory Protection:	Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. Follow a respiratory protection program that meets 29 CFR 1910.134 and ANSI Z88.2 requirements whenever work place conditions warrant the use of a respirator. Respiratory protection may be required in addition to ventilation depending upon conditions of use.
Eye Protection:	Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses. Wear goggles and a Face shield
Skin Protection:	Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work Where contact is likely, wear chemical resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield
Gloves:	No information available
<b>Control Parameters:</b>	

#### **Chemical Name** ACGIH TLV-TWA ACGIH STEL IDLH Propylene glycol No TLV ND Acid Red 52 No TLV ND

### IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	
pH:	ND	
Solubility in Water:	Complete; 100%	
<b>Octanol/Water Partition Coefficient:</b>	1.41	
Specific Gravity:	1.024	
Bulk Density:	8.545	
Flash Point:	99 deg. C	
X. STABILITY AND REACTIVITY		
Stability:	Stable under normal conditions.	

**Conditions to Avoid:** 

None known. Contamination



## Material Safety Data Sheet

Materials to Avoid/Chemical Incompatibility: Hazardous Decomposition Products:

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Strong oxidizing agents Acids Strong reducing agents Carbon dioxide Carbon monoxide

### XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):			
Chemical Name	CAS Number		
1,2-Propanediol	57-55-6		

#### LD50/LC50

Oral LD50 Rat : 20 gm/kg; Oral LD50 Mouse : 22 gm/kg; Dermal LD50 Rabbit : Oral LD50 Mouse: 10300 mg/kg

Ammonium, (6-(diethylamino)-9-(2,4disulfophenyl)-3H-xanthen-3ylidene)diethyl-, hydroxide, inner salt, sodium salt

### XII. ECOLOGICAL INFORMATION

Overview:	This material is not expected to be harmful to the ecology.
Mobility:	No data
Persistence:	No data
<b>Bioaccumulation:</b>	No data
Degradability:	No data

3520-42-1

#### XIII. DISPOSAL CONSIDERATIONS

Disposal of Packaging:	Recycle containers whenever possible.
Disposal Methods:	Dispose of according to Federal, State, Local, or Provincial regulations.

### XIV. TRANSPORTATION INFORMATION

## DOT & IMDG: NOT RESTRICTED

#### XV. REGULATORY INFORMATION

Chemical Name	CAS #	Regulation	% Range
No 313-listed chemicals in this product		SARA 313	
1,2-Propylene glycol	57-55-6	Canadian WHMIS list	10 - 30
Propylene glycol	57-55-6	New Jersey RTK List	10 - 30
1,2-Propanediol	57-55-6	Pennsylvania RTK List	10 - 30

Consumer Product Safety Improvement Act of 2008 General Conformity Certification:

The Supplier identified in Section 1 of this MSDS has evaluated this product and certifies it to be labeled and packaged in compliance with the applicable provisions of the Federal Hazardous Substance Act as stated in 16 CFR 1500 and enforced by the Consumer Product Safety Commission, and where applicable the products that require Child Resistant Closures are packaged in accordance with the Poison Prevention Packaging Act as stated in 16 CFR 1700 and enforced by the Consumer Product Safety Commission. All closures have been tested in accordance with the latest protocols. No other testing is required to certify compliance with the above. The date of manufacture is stamped on the product container.

## XVI. ADDITIONAL INFORMATION

**Disclaimer:** This material safety data sheet and the information it contains is offered to you in good faith as accurate. We have reviewed any information contained in the data sheet which we have received from outside sources and we believe the information to be correct, but cannot guarantee its accuracy or completeness. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product in a safe manner and to comply with all applicable laws and regulations. No statement made in this data sheet shall be construed as permission or recommendation for the use of any product in a manner that might infringe existing patents. No warranty is made, either expressed or implied.



A Schlumberger Company

## MATERIAL SAFETY DATA SHEET

## MSDS No. 12006 Trade Name: POLY-PLUS* 2000 Revision Date: 12/17/2010 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name:	POLY-PLUS* 20	000		
Chemical Family: Product Use:	Mixture Drilling fluid add	itive.		
Supplied by: Telephone Number: Emergency Telephone (2 Prepared by:	M-I L.L.C. P.O. Box 42842 Houston, TX 772 www.miswaco.s 281-561-1509 24 hr.): 281-561-1600 Product Safety C	242 Ib.com		
Revision No.	5			
HMIS Rating Health: 2	Flammability: 1	Physical Hazard: 0	PPE:	J

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

## 2. HAZARDS IDENTIFICATION

Emergency Overview:	Warning! Causes severe eye irritation. Prolonged contact may damage eye. May cause severe skin irritation. May cause respiratory tract irritation. Vapors or mists may cause central nervous system (CNS) effects if inhaled.		
Canadian Classification: UN PIN No: Not regulated	WHMIS Clas	s: D2B	
Physical State: Liquid	Color: White	Odor:	Slight hydrocarbon
Potential Health Effects: Acute Effects Eye Contact: Skin Contact: Inhalation: Ingestion:	May cause severe eye irritation. Prote May cause severe skin irritation. Prote of the skin and/or dermatitis (inflamma Vapors and mists may cause central r inhaled. May cause gastric distress, nausea an hazard if this material is swallowed.	nged or repeated c ition). hervous system (CN	ontact may cause defatting IS) effects and irritation if
Acute Effects Note:	This product may release ammonia or Ammonia is a severe eye, skin and re odor and can be detected at levels as and respiratory irritants.	spiratory irritant. A	mmonia has a very strong

Trade Name: POLY-PLUS* 2000

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Carcinogenicity & ChronicSee Section 11 - Toxicological Information.Effects:Eyes. Dermal (skin) contact. Inhalation.Routes of Exposure:Eyes. Dermal (skin) contact. Inhalation.Target Organs/MedicalEyes. Skin. Respiratory System. Central Nervous System (CNS).Conditions Aggravated by<br/>Overexposure:Eyes. Skin. Respiratory System. Central Nervous System (CNS).

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS No.	Wt. %	Comments:
	60 - 100	No comments.
	15 - 40	No comments.
	10 - 30	No comments.
	CAS No.	60 - 100 15 - 40

## 4. FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with large amounts of water for at least 15 minutes. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Do not induce vomiting. Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. Get immediate medical attention.
General notes: Notes To Physician:	Persons seeking medical attention should carry a copy of this MSDS with them. Aspiration may cause severe lung damage. Evacuate stomach in a way which avoids aspiration.

## 5. FIRE FIGHTING MEASURES

**Flammable Properties** 

 Flash Point: F (C):
 >200F (93C)

 Flash Point Method:
 PMCC

 Flammable Limits in Air - Lower (%): ND

 Flammable Limits in Air - Upper (%): ND

 Autoignition Temperature: F (C): ND

 Flammability Class:

 IIIB

 Other Flammable Properties:

 ND

 Extinguishing Media:

## Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Wear approved positive-pressure self-contained breathing apparatus and protective clothing.

Hazardous Combustion Products: Ammonia or amines. Oxides of carbon and nitrogen.

Trade Name: POLY-PLUS* 2000

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## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protective equipment identified in Section 8.

**Spill Procedures:** Contain spilled material. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Shut off leak if it can be done safely. If released into the environment, take all reasonable measures to repair, remedy and confine the effects of the substance. Remediate, manage, remove or otherwise dispose of the substance in accordance with applicable laws and regulations. Absorb in vermiculite, dry sand or earth. Place into containers for disposal.

**Environmental Precautions:** Waste must be disposed of in accordance with federal, state and local laws. In the U.S., for products with reportable quanitity (RQ) components - if the RQ is exceeded, report to National Spill Response Office at 1 800 424 8802.

## 7. HANDLING AND STORAGE

Handling:

Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid breathing vapors or spray mists. Use only in a well ventilated area. Wash thoroughly after handling.

Storage:Store at room temperature in dry, well ventilated area.Keep container closed.Keep<br/>away from heat, sparks and flames.warehousing practices regarding palletizing, banding, shrink-wrapping and/or<br/>stacking.stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Anionic polyacrylamide		60 - 100	NA	NA	NA	(1) (6)
Surfactants		15 - 40	NA	NA	NA	None
Mineral oil, petroleum distillates		10 - 30	NA	NA	NA	(3) Oil mist.

#### Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable).

(3) For Oil mist, mineral: ACGIH TLV 5 mg/m³, STEL 10 mg/m³; OSHA PEL 5 mg/m³

(6) Ammonia or amines may be released when this component is heated or exposed to high pH. The recommended exposure limits for ammonia are ACGIH TLV 25 ppm and OSHA PEL 50 ppm. No general recommended exposure limit is available for amines. A NIOSH/MSHA approved respirator with ammonia/methylamine cartridges should be used to protect against ammonia or amine inhalation exposure.

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

## Personal Protection Equipment

Trade Name: POLY-PLUS* 2000

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All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

Eye/Face Protection:	Wear chemical safety goggles.
Skin Protection:	Wear appropriate clothing to prevent repeated or prolonged skin contact. Chemical resistant gloves recommended for prolonged or repeated contact. Use protective gloves made of:
Respiratory Protection:	All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent. If exposed to airborne mist/aerosol of this product, use at least a NIOSH-approved N95 half-mask disposable or re-usable particulate respirator. In work environments containing oil mist/aerosol, use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator. This product contains nitrogen compounds which may, in some circumstances, form ammonia or amine compounds. If exposed to ammonia or amine compounds from this product use a NIOSH/MSHA-approved respirator with an Ammonia/Methylamine cartridge.
General Hygiene Considerations	: Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

## **10. STABILITY AND REACTIVITY**

Chemical Stability: Conditions to Avoid: Materials to Avoid: Hazardous Decomposition Products: Hazardous Polymerization

Stable Keep away from heat, sparks and flame. Oxidizers. Acids. Bases. For thermal decomposition products, see Section 5.

Will not occur

Trade Name: POLY-PLUS* 2000

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## 11. TOXICOLOGICAL INFORMATION

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	CAS No.	Acute Data
Anionic polyacrylamide		Oral LD50: Estimated >2000 mg/kg (rat)
Mineral oil, petroleum distillates		Oral LD50: >5gm/kg (rat); Dermal LD50: >5 gm/kg (rabbit)

#### **Product Toxicological Information:**

This product may contain trace amounts of acrylamide (< 0.1%). Acrylamide (CAS 79-06-1) has been classified by the International Agency for Research on Cancer (IARC) as a Group 2A carcinogen (probably carcinogenic to humans) and a suspect carcinogen by the National Toxicology Program (NTP). (LOLI). Acrylamide is included on the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) list of substances "known to cause cancer".

## 12. ECOLOGICAL INFORMATION

#### Component Ecotoxicity Data:

Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

Ingredient C	CAS No.	Data
Mineral oil, petroleum distillates		LC50 96H: >5000 mg/l (Pimephales promelas); EC50 48H:
		>1000 mg/l (Daphnia magna)

Product Ecotoxicity Data:
Biodegration:
Bioaccumulation:
Octanol/Water Partition
Coefficient:

ND

Contact M-I Environmental Affairs Department for available product ecotoxicity data. ND ND

## **13. DISPOSAL CONSIDERATIONS**

Waste Classification:	ND
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## **14. TRANSPORT INFORMATION**

U.S. DOT Shipping Description:

Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA. Not regulated.

Canada TDG Shipping Description:

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#### UN PIN No: IMDG Shipping Description: ICAO/IATA Shipping Description:

Not regulated. Not regulated. Not regulated.

## **15. REGULATORY INFORMATION**

## U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Immediate (acute) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

### **International Chemical Inventories**

Australia AICS - Components are listed or exempt from listing. Canada DSL - Components are listed or exempt from listing. China Inventory - Contains a component that is not listed. European Union EINECS/ELINCS - Contains a component(s) that is not listed. Japan METI ENCS - Contains a component that is not listed. Korea TCCL ECL - Components are listed or exempt from listing. Philippine PICCS - Contains a component that is not listed. U.S. TSCA - Components are listed or exempt from listing. U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

## Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: D2B

**16. OTHER INFORMATION** 

The following sections have been revised: 1, 6, 11, 16.

## NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

#### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



# MSDS No. 10094 Trade Name: POLY-PLUS* Revision Date: 12/17/2010 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

HMIS Rating Health: 1	Flammability: 1	Physical Hazard: 0	PPE:	J			
Revision No.	8						
Supplied by: Telephone Number: Emergency Telephone (2 Prepared by:	M-I L.L.C. P.O. Box 42842 Houston, TX 77 www.miswaco. 281-561-1509 24 hr.): 281-561-1600 Product Safety	7242 slb.com					
Chemical Family: Product Use:	Mixture Drilling fluid ad	Mixture Drilling fluid additive. Shale control agent.					
Trade Name:	POLY-PLUS*						

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

# 2. HAZARDS IDENTIFICATION

Emergency Overview:	Caution! May cause eye, skin and respiratory tract irritation. Vapors or mists may cause central nervous system (CNS) effects if inhaled.			
Canadian Classification: UN PIN No: Not regulated.	WHMIS Class: D2B			
Physical State: Viscous Liqu	d Color: White Odor: Hydrocarbon			
Potential Health Effects: Acute Effects Eye Contact: Skin Contact: Inhalation: Ingestion:	May irritate eyes. May be irritating to the skin. Prolonged or repeated contact may cause defatting of the skin and/or dermatitis (inflammation). Overexposure to vapors and mists which may be released at high temperatures may cause central nervous system (CNS) effects and respiratory tract irritation. May cause gastric distress, nausea and vomiting if ingested. Aspiration can be a hazard if this material is swallowed.			
Carcinogenicity & Chronic Effects: Routes of Exposure: Target Organs/Medical Conditions Aggravated by Overexposure:	See Section 11 - Toxicological Information. Eyes. Dermal (skin) contact. Inhalation. Eyes. Skin. Respiratory System. Central Nervous System (CNS).			

Trade Name: POLY-PLUS*

**MSDS No.** 10094

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### **COMPOSITION/INFORMATION ON INGREDIENTS** 3.

Ingredient	CAS No.	Wt. %	Comments:
Petroleum distillates,	64742-47-8	30 - 60	No comments.
hydrotreated light			
Anionic polyacrylamide		30 - 60	No comments.

# 4. FIRST AID MEASURES

Eye Contact:	Promptly wash eyes with lots of water while lifting eye lids. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.				
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.				
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.				
Ingestion:	Do not induce vomiting. Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. Get medical attention.				
General notes: Notes To Physician:	Persons seeking medical attention should carry a copy of this MSDS with them. Aspiration may cause severe lung damage. Evacuate stomach in a way which avoids aspiration.				

### FIRE FIGHTING MEASURES 5.

### **Flammable Properties**

Flash Point: F (C): >200F (93C) PMCC Flash Point Method: Flammable Limits in Air - Lower (%): ND Flammable Limits in Air - Upper (%): ND Autoignition Temperature: F (C): ND Flammability Class: IIIB Other Flammable Properties: ND **Extinguishing Media:** Water fog, carbon dioxide, foam, dry chemical.

### **Protection Of Fire-Fighters:**

Special Fire-Fighting Procedures: Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Oxides of carbon and nitrogen.

# 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** 

Use personal protective equipment identified in Section 8.

Trade Name: POLY-PLUS* Revision Date: 12/17/2010

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Spill Procedures:	Contain spilled material. Shut off leak if it can be done safely. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. If released into the environment, take all reasonable measures to repair, remedy and confine the effects of the substance. Remediate, manage, remove or otherwise dispose of the substance in accordance with applicable laws and regulations. Spilled product is very slippery. Absorb in vermiculite, dry sand or earth. Place into containers for disposal.
Environmental Precautions:	Waste must be disposed of in accordance with federal, state and local laws. In the U.S., for products with reportable quanitity (RQ) components - if the RQ is exceeded,

# 7. HANDLING AND STORAGE

report to National Spill Response Office at 1 800 424 8802.

Handling:	Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid breathing vapors or spray mists. Use only in a well ventilated area. Spilled product is very slippery. Wash thoroughly after handling.
Storage:	Store in dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Petroleum distillates,	64742-47-8	30 - 60	NA	NA	NA	(3) Oil mist.
hydrotreated light						
Anionic polyacrylamide		30 - 60	NA	NA	NA	None

### Notes

(3) For Oil mist, mineral: ACGIH TLV 5 mg/m³, STEL 10 mg/m³; OSHA PEL 5 mg/m³

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

**Eye/Face Protection:** Wear chemical safety goggles.

Skin Protection:Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear<br/>chemical resistant gloves such as nitrile or neoprene.

Trade Name: POLY-PLUS* Revision Date: 12/17/2010

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**Respiratory Protection:** 

All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne mist/aerosol of this product, use at least a NIOSH-approved N95 half-mask disposable or re-usable particulate respirator. In work environments containing oil mist/aerosol, use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

If exposed to vapors from this product use a NIOSH/MSHA-approved respirator with an Organic Vapor cartridge.

**General Hygiene Considerations:** Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	White
Odor:	Hydrocarbon
Physical State:	Viscous Liquid
pH:	6 - 8
Specific Gravity (H2O = 1):	1.07 - 1.10
Solubility (Water):	Slightly.
Flash Point: F (C):	>200F (93C)
Melting/Freezing Point:	32F (0C)
Boiling Point:	212F (100C) at 760 mmHg
Viscosity:	~500 cP
Pour Point:	-20F (-29C)
Vapor Pressure:	0.002 mm Hg at 68F (20C)
Vapor Density (Air=1):	ND
Evaporation Rate:	ND
Odor Threshold(s):	ND

# **10. STABILITY AND REACTIVITY**

Chemical Stability:	Stable
Conditions to Avoid:	Keep away from heat, sparks and flame.
Materials to Avoid:	Oxidizers.
Hazardous Decomposition	For thermal decomposition products, see Section 5.
Products:	
Hazardous Polymerization	Will not occur

# **11. TOXICOLOGICAL INFORMATION**

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	CAS No.	Acute Data
Petroleum distillates, hydrotreated	64742-47-8	Oral LD50: >39.9 g/kg (rat); Dermal LD50: 2.0 - 4.0 g/kg
light		(rabbit); Inhalation LC50: >24.1 mg/l/1H (rat)

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Trade Name: POLY-PLUS*

MSDS No. 10094

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### **Product Toxicological Information:**

This product may contain trace amounts of acrylamide (< 0.1%). Acrylamide (CAS 79-06-1) has been classified by the International Agency for Research on Cancer (IARC) as a Group 2A carcinogen (probably carcinogenic to humans) and a suspect carcinogen by the National Toxicology Program (NTP). (LOLI). Acrylamide is included on the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) list of substances "known to cause cancer".

### 12. ECOLOGICAL INFORMATION

### **Component Ecotoxicity Data:**

Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

Ingredient	CAS No.	Data
Petroleum distillates, hydrotreated light	64742-47-8	LC50 48H static: 7500 ug/l (Danio rerio (zebra danio)); LC50 4D static: 5900 ug/l (Lepomis macrochirus (bluegill)); LC50 24H static: 3200 ug/l (Oncorhynchus mykiss (rainbow trout)); LC50 48H static: 8800 ug/l (Poecilia reticulata (guppy))

Product Ecotoxicity Data:	
Biodegration:	
Bioaccumulation:	
Octanol/Water Partition	
Coefficient:	

ND ND

Contact M-I Environmental Affairs Department for available product ecotoxicity data. ND

### 13. **DISPOSAL CONSIDERATIONS**

Waste Classification:	ND
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

### **TRANSPORT INFORMATION** 14.

U.S. DOT **Shipping Description:** 

**Canada TDG Shipping Description:** UN PIN No: **IMDG Shipping Description: ICAO/IATA Shipping Description:** 

Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA. Not regulated. Not regulated. Not regulated. Not regulated.

### **REGULATORY INFORMATION** 15.

Trade Name: POLY-PLUS*

MSDS No. 10094

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### U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Immediate (acute) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

### **International Chemical Inventories**

Australia AICS - Components are listed or exempt from listing. Canada DSL - Components are listed or exempt from listing. China Inventory - Components are listed or exempt from listing. European Union EINECS/ELINCS - Components are listed or exempt from listing. Japan METI ENCS - Components are listed or exempt from listing. Korea TCCL ECL - Components are listed or exempt from listing. New Zealand - Components are listed or exempt from listing. Philippine PICCS - Components are listed or exempt from listing. U.S. TSCA - Components are listed or exempt from listing.

### Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: D2B

**16. OTHER INFORMATION** 

The following sections have been revised: 1, 6, 11, 16.

### NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



# MSDS No. 12165 Trade Name: POLYSWELL Revision Date: 04/06/2010 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION Trade Name: POLYSWELL

Chemical Family: Product Use:	Acrylamide polymer or copolymer Drilling fluid additive.
Supplied by:	M-I HDD MINING & WATERWELL A Business Unit of M-I L.L.C. P.O. Box 42842 Houston, TX 77242 www.drilling-fluids.com
Telephone Number: Emergency Telephone (24 hr.): Prepared by:	281-561-1511 281-561-1600 Product Safety Group
Revision No.	5
HMIS Rating	

niviis kaung				
Health: 1	Flammability: 1	Physical Hazard: 0	PPE:	Е

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

# 2. HAZARDS IDENTIFICATION

Emergency Overview:	Caution! May cause mechanical irritation of eyes, skin and respiratory tract. Long term inhalation of particulates may cause lung damage.
Canadian Classification: UN PIN No: Not regulated.	WHMIS Class: Not a controlled product.
Physical State: Powder, dust.	Color: White Odor: Odorless
Potential Health Effects: Acute Effects Eye Contact: Skin Contact: Inhalation: Ingestion:	May cause mechanical irritation May cause mechanical irritation. May cause mechanical irritation. May cause gastric distress, nausea and vomiting if ingested.
Acute Effects Note:	This product may release ammonia or amines when heated or exposed to high pH. Ammonia is a severe eye, skin and respiratory irritant. Ammonia has a very strong odor and can be detected at levels as low as 5 ppm. Many amines are also eye, skin and respiratory irritants.
Carcinogenicity & Chronic Effects: Routes of Exposure:	See Section 11 - Toxicological Information. Eyes. Dermal (skin) contact. Inhalation.

Trade Name: POLYSWELL

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Target Organs/Medical Conditions Aggravated by **Overexposure:** 

Eyes. Skin. Respiratory System.

### 3. **COMPOSITION/INFORMATION ON INGREDIENTS**

Ingredient	CAS No.	Wt. %	Comments:
Anionic acrylamide copolymer		90-100	No comments.

# 4. FIRST AID MEASURES

Eye Contact:	Promptly wash eyes with lots of water while lifting eye lids. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
General notes:	Persons seeking medical attention should carry a copy of this MSDS with them.

### FIRE FIGHTING MEASURES 5.

### **Flammable Properties**

Flash Point: F (C): NA Flammable Limits in Air - Lower (%): ND Flammable Limits in Air - Upper (%): ND Autoignition Temperature: F (C): ND Flammability Class: NA Other Flammable Properties: Particulate may accumulate static electricity. Dusts at sufficient concentrations can form explosive mixtures with air. Use extinguishing media appropriate for surrounding fire. **Extinguishing Media:** 

**Protection Of Fire-Fighters:** 

Special Fire-Fighting Procedures: Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Oxides of: Carbon. Ammonia or amines.

### ACCIDENTAL RELEASE MEASURES 6.

**Personal Precautions:** 

Use personal protective equipment identified in Section 8.

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Spill Procedures:Evacuate the spill area with the exception of the spill response team. Wet product<br/>may create a slipping hazard. Contain spilled material. Do not allow spilled material<br/>to enter sewers, storm drains or surface waters. Avoid the generation of dust.<br/>Sweep, vacuum, or shovel and place into closable container for disposal.

**Environmental Precautions:** Waste must be disposed of in accordance with federal, state and local laws.

# 7. HANDLING AND STORAGE

Handling:

Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only with adequate ventilation. Wash thoroughly after handling.

Storage:

Store in dry, well-ventilated area. Keep container closed. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Anionic acrylamide copolymer		90-100	NA	NA	NA	(1) (6)

### Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable).

(6) Ammonia or amines may be released when this component is heated or exposed to high pH. The recommended exposure limits for ammonia are ACGIH TLV 25 ppm and OSHA PEL 50 ppm. No general recommended exposure limit is available for amines. A NIOSH/MSHA approved respirator with ammonia/methylamine cartridges should be used to protect against ammonia or amine inhalation exposure.

**Engineering Controls:** Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

 Eye/Face Protection:
 Dust resistant safety goggles.

 Skin Protection:
 Not normally necessary. If needed to minimize irritation: Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as: Nitrile. Neoprene.

Trade Name: POLYSWELL Revision Date: 04/06/2010

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**Respiratory Protection:** 

All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne mist/aerosol of this product, use at least a NIOSH-approved N95 half-mask disposable or re-usable particulate respirator. In work environments containing oil mist/aerosol, use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

This product contains nitrogen compounds which may, in some circumstances, form ammonia or amine compounds. If exposed to ammonia or amine compounds from this product use a NIOSH/MSHA-approved respirator with an Ammonia/Methylamine cartridge.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	White
Odor:	Odorless
Physical State:	Powder, dust.
pH:	ND
Specific Gravity (H2O = 1):	0.8 - 1.0 at 68F (20C)
Solubility (Water):	Swells on contact with water.
Flash Point: F (C):	NA
Melting/Freezing Point:	ND

# **10. STABILITY AND REACTIVITY**

Chemical Stability: Conditions to Avoid:	Stable Keep away from heat, sparks and flame. Avoid contact with water and moist air - product is hygroscopic.
Materials to Avoid: Hazardous Decomposition Products: Hazardous Polymerization	Oxidizers. For thermal decomposition products, see Section 5. Will not occur
Razaruous Polymenzation	

# **11. TOXICOLOGICAL INFORMATION**

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	CAS No.	Acute Data
Anionic acrylamide copolymer		Oral LD50: >5000 mg/kg (rat);
		(rabbit)

Trade Name: POLYSWELL

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### Product Toxicological Information:

Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

This product may contain trace amounts of acrylamide (< 0.1%). Acrylamide (CAS 79-06-1) has been classified by the International Agency for Research on Cancer (IARC) as a Group 2A carcinogen (probably carcinogenic to humans) and a suspect carcinogen by the National Toxicology Program (NTP). (LOLI)

# 12. ECOLOGICAL INFORMATION

**Component Ecotoxicity Data:** 

Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

Ingredient	CAS No.	Data
Anionic acrylamide copolymer		LC50 96H: ~3600 mg/l (Leucidcus idus); LC50 96H: ~5000
		mg/l (Brachydanio rerio)

Product Ecotoxicity Data: Biodegration:	Contact M-I Environmental Affairs Department for available product ecotoxicity data. ND
Bioaccumulation:	ND
Octanol/Water Partition Coefficient:	ND

# **13. DISPOSAL CONSIDERATIONS**

Waste Classification:	ND
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

# 14. TRANSPORT INFORMATION

U.S. DOT Shipping Description:

Canada TDG Shipping Description: UN PIN No: IMDG Shipping Description: ICAO/IATA Shipping Description: Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA. Not regulated. Not regulated. Not regulated. Not regulated. Not regulated.

# **15. REGULATORY INFORMATION**

Trade Name: POLYSWELL

Revision Date: 04/06/2010

MSDS No. 12165

U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Not a SARA 311/312 hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

### **International Chemical Inventories**

Australia AICS - Components are listed or exempt from listing. Canada DSL - Components are listed or exempt from listing. China Inventory - Components are listed or exempt from listing. European Union EINECS/ELINCS - Components are listed or exempt from listing. Japan METI ENCS - Components are listed or exempt from listing. Korea TCCL ECL - Components are listed or exempt from listing. New Zealand - Components are listed or exempt from listing. Philippine PICCS - Components are listed or exempt from listing. U.S. TSCA - Components are listed or exempt from listing.

### Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: Not a controlled product.

# **16. OTHER INFORMATION**

The following sections have been revised: 1, 11, 16

### NA - Not Applicable, ND - Not Determined.

### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

# MATERIAL SAFETY DATA SHEET PORTLAND CEMENT TYPE II

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME:	PORTLAND CEMENT TYPE II	
APPLICATIONS:	Oil well drilling fluid additive.	
EMERGENCY TELEPHONE:	281-561-1600	
SUPPLIER:	Supplied by a Business Unit of M-I L.L.C. P.O. Box 42842, Houston, Texas 77242-2842 See cover sheet for local supplier.	
TELEPHONE:	281-561-1509	
FAX:	281-561-7240	
CONTACT PERSON:	Sam Hoskin - Manager, Occupational Health	

### 2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME:	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
Portland Cement	65997-15-1	99-100 %		
Gypsum	13397-24-5	0-1 %		
Silica, crystalline, quartz	14808-60-7	0-1 %		

### 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW:

CAUTION! MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. Avoid contact with eyes, skin and clothing. Avoid breathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

This product is a/an gray to white powder. May form explosive dust-air mixtures. Slippery when wet. A nuisance dust.

### ACUTE EFFECTS:

### HEALTH HAZARDS, GENERAL:

Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may lead to pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma. Dermatitis and asthma may result from short contact periods.

- INHALATION: May be irritating to the respiratory tract if inhaled.
- INGESTION: May cause gastric distress, nausea and vomiting if ingested.
- SKIN: May be irritating to the skin.
- EYES: May be irritating to the eyes.

CHRONIC EFFECTS:

### CARCINOGENICITY:

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

ATTENTION! CANCER HAZARD. CONTAINS CRYSTALLINE SILICA WHICH CAN CAUSE CANCER. Risk of cancer depends on duration and level of exposure.

IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of guartz or cristobalite from occupational sources causes cancer in humans. IARC classification Group 1.

### ROUTE OF ENTRY:

Inhalation. Skin and/or eye contact.

### TARGET ORGANS:

Respiratory system, lungs. Skin. Eyes.

### 4. FIRST AID MEASURES

GENERAL:	Persons seeking medical attention should carry a copy of this MSDS with them.
INHALATION:	Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.
INGESTION:	Drink a couple of glasses water or milk. Do NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. Get medical attention.
SKIN:	Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.
EYES:	Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 5. FIRE FIGHTING MEASURES

AUTO IGNITION TEMP. (°F):	N/D
FLAMMABILITY LIMIT - LOWER(%):	N/D
FLAMMABILITY LIMIT - UPPER(%):	N/D

### EXTINGUISHING MEDIA:

Carbon dioxide (CO2). Dry chemicals. Foarn. Water spray, fog or mist.

### SPECIAL FIRE FIGHTING PROCEDURES:

No specific fire fighting procedure given.

### UNUSUAL FIRE & EXPLOSION HAZARDS:

Dust in high concentrations may form explosive mixtures with air.

### HAZARDOUS COMBUSTION PRODUCTS:

Irritating gases/vapors/fumes. Oxides of: Carbon.

### 6. ACCIDENTAL RELEASE MEASURES

### PERSONAL PRECAUTIONS:

Wear proper personal protective equipment (see MSDS Section 8).

### SPILL CLEAN-UP PROCEDURES:

Avoid generating and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Do not contaminate drainage or waterways. Repackage or recycle if possible.

### 7. HANDLING AND STORAGE

### HANDLING PRECAUTIONS:

Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Bye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation. Mechanical ventilation or local exhaust ventilation is required.

### STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

### 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

		OSHA	PEL:	ACGIH	TLV:	OTHER	2:	
INGREDIENT NAME: Portland Cement Gypsum	CAS No.: 65997-15-1 13397-24-5	TWA: 15 15	STEL:	<b>TWA:</b> 10	STEL:	TWA:	STEL:	UNITS: mg/m3 mg/m3 total
Silica, crystalline, quartz	14808-60-7	*		0.1				dust mg/m3 resp.dust

### INGREDIENT COMMENTS:

* OSHA PELs for Mineral Dusts containing crystalline silica are 10 mg/m3 / (%SiO2+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite.

### **PROTECTIVE EQUIPMENT:**



### ENGINEERING CONTROLS:

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

- VENTILATION: Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.
- RESPIRATORS: Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

### PROTECTIVE GLOVES:

Use suitable protective gloves if risk of skin contact.

### EYE PROTECTION:

Wear dust resistant safety goggles where there is danger of eye contact.

### **PROTECTIVE CLOTHING:**

Wear appropriate clothing to prevent repeated or prolonged skin contact.

### HYGIENIC WORK PRACTICES:

Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: Powder, dust.

COLOR: ODOR: SOLUBILITY DESCRIPTION: VAPOR DENSITY (air=1): VAPOR PRESSURE: Grey, to White. Odorless or no characteristic odor. Slightly soluble in water. N/A N/A T'EMPERATURE (°F):

### 10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID: N/A.

HAZARDOUS POLYMERIZATION: Will not polymerize.

POLYMERIZATION DESCRIPTION: Not relevant.

MATERIALS TO AVOID:

Alkali carth metals.

HAZARDOUS DECOMPOSITION PRODUCTS: No specific hazardous decomposition products noted.

### 11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

No toxicological data is available for this product.

### 12. ECOLOGICAL INFORMATION

### ECOLOGICAL INFORMATION:

Contact M-I Environmental Affairs for ecological information.

## 13. DISPOSAL CONSIDERATIONS

### WASTE MANAGEMENT:

This product does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc, may render the resulting materials hazardous.

Empty containers retain residues. All labeled precautions must be observed.

### **DISPOSAL METHODS:**

Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

### 14. TRANSPORT INFORMATION

PRODUCT RQ:

N/A

ICAO CLASS:	Not regulated.	
AIR TRANSPORT:		
SEA TRANSPORT: IMDG CLASS:	Not regulated.	
CANADIAN TRANSPORT: TDGR CLASS:	Not regulated.	
U.S. DOT: U.S. DOT CLASS:	Not regulated.	

### 15. REGULATORY INFORMATION

NAME:	CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
Portland Cement	65997-15-1	Yes	No	No	No	Yes
Gypsum	13397-24-5	Yes	No	No	No	Yes
Silica, crystalline, quartz	14808-60-7	Yes	No	No	No	Yes
US FEDERAL REGULATIONS:						
WASTE CLASSIFICATION:	Not a hazardous	waste by L	.S. RCRA cr	iteria. See Sect	ion 13.	
REGULATORY STATUS:	This Product or i be all inclusive -				o following reg	ulations (Not meant to
	SECTION 313:					
	requirements of and Act of 1986 and			of the Superfun	d Amendment a	nd Reauthorization
	SARA 311 Categ	gories:				
	1: Immediate (Ad	cute) Healt	h Effects.			
		of this pro		l on or are exer	npt from the fol	lowing international
	chemical registrie TSCA (U.S.) DSL (Canada)	es:				
STATE REGULATIONS:						
STATE REGULATORY STATUS:	This product or it	s compone	ents, if a mixt	ure, is subject t	o following regi	lations (Not meant to
	be all inclusive - New Jersey Righ	selected re	gulations repr			
	Illinois Right-to-J					
)	Pennsylvania Rig					142 142 AV 51
		fe Drinkin	g Water and	<b>Foxic</b> Enforcen	nent Act of 1986	nsidered by the State 5 as causing cancer or crystalline
CANADIAN REGULATIONS:						
LABELS FOR SUPPLY:	$\frown$					
	$(\mathbf{T})$					
	$\mathbf{\cdot}$					

**REGULATORY STATUS:** 

This Material Safety Data Sheet has been prepared in compilance with the Controled Product Regulations.

Canadian WHMIS Classification: D2B - Other Toxic Effects: Toxic Material

### 16. OTHER INFORMATION

NPCA HMIS HAZARD INDEX: FLAMMABILITY: REACTIVITY:	* 1 Slight Hazard 0 Minimal Hazard 0 Minimal Hazard
NPCA HMIS PERS. PROTECT. INDEX:	E - Safety Glasses, Gloves, Dust Respirator
USER NOTES:	N/A = Not applicable N/D = Not determined
INFORMATION SOURCES:	OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants. ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition). Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997). Product information provided by the commercial vendor(s).
PREPARED BY:	Sam Hoskin
REVISION No .:	0
MSDS STATUS:	Approved.
DATE: December 18, 1998	

### DISCLAIMER:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data therein is made or incurred hereunder.

### **Cross Packaging Material Safety Data Sheet**

CROSS PACKAGING 484 E. 6[™] ST. SMACKOVER, AR 71762 Information: Emergency: Fax: 870 864-6275 870-881-8700, Ext. 1163 870 864-8656

### **SECTION 1**

**SECTION 3** 

### CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: CAS Registry Number: Synonyms: **NAPA Power Steering Fluid**, **9800**, **9832**, **9801** Not applicable for mixtures.

Item Number: Generic/Chemical Name: Product Type: Preparation/Revision Date:

Petroleum hydrocarbon fluid., POWER STEERING FLUID Industrial hydraulic lubricant 07/10/11

SECTION 2	ECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS					
INGREDIENTS	CAS #	%	ACGIH TWA	OSHA PEL	OSHA STEL	SKIN
Hydrotreated Napthenic Distillates	Mixture	95 - 100	5 mg/m³ (oil mist)	5 mg/m³ (oil mist)	10 mg/m³ (oil mist)	NO
Proprietary additives	Mixture	0 - 5	5 mg/m ³ (oil mist)	5 mg/m ³ (oil mist)	10 mg/ḿ³ (oil mist)	NO
Zinc salts of dialkyl dithiophosphoric acid	68649-42-3	<0.5	5 mg/m ^{3́} (oil mist)	5 mg/m ³ (oil mist)	10 mg/m ³ (oil mist)	NO

**HAZARDS IDENTIFICATION** 

WARNING:	- NONE REQUIRED
Eye Contact:	This product is not normally expected to cause eye irritation. Avoid prolonged contact with the eyes, which may cause mild eye discomfort, tearing, or blurring of vision. Based on data from similar materials.
Skin Contact:	This product is not expected to cause skin irritation. Prolonged or repeated contact may lead to an allergic skin sensitization in some people and dermatitis (dryness, chapping and reddening of skin). Based on component data and data from similar materials.
Inhalation:	Overexposure by inhalation of hot material may cause nonspecific discomfort, such as nausea, headache, or weakness. Caution should be taken to prevent forming aerosol or misting of this product without proper respiratory protection.
Ingestion:	Do not ingest. Due to the expected concentration of oil (70-100%) ingestion is expected to be relatively non-toxic unless lung aspiration occurs. Aspiration may lead to chemical pneumonitis, which is characterized by pulmonary edema and hemorrhage and may be fatal. Signs of lung involvement include increased respiratory rate, increased heart rate, and a bluish discoloration of the skin. Coughing, choking, and gagging are often noted at the time of aspiration. Gastrointestinal discomfort may develop, followed by vomiting with a further risk of aspiration. This product has laxative properties and may result in abdominal cramps and diarrhea.

# **Cross Packaging Material Safety Data Sheet**

<b>SECTION 4</b>	FIRST AID MEASURES
Eye Contact:	Immediately flush eyes with large amounts of water and continue flushing until irritation subsides. If irritation persists call a physician. If material is hot, treat for thermal burns and take victim to hospital immediately.
Skin Contact:	Remove contaminated clothing. Wash contaminated area thoroughly with soap and water. If redness or irritation occurs, seek medical attention. If material is hot, submerge injured area in cold water. If victim is severely burned, remove to a hospital immediately. Wash contaminated clothing before reuse.
Inhalation:	If overcome by inhalation of hot vapors, remove to fresh air. Use oxygen if there is difficulty breathing or artificial respiration if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.
Oral Contact:	DO NOT INDUCE VOMITING. Do not induce vomiting due to aspiration hazard. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Should vomiting occur lower head below knees to avoid aspiration. Seek immediate medical attention.

SECTION 5	FIRE FIGHTING MEASURES
Flash Point: Upper Flammable	182°C (360°F) by Cleveland Open Cup, ASTM D 92.
Limit:	Not determined.
Lower Flammable	
Limit:	Not Determined.
Extinguishing Media:	Use dry chemical, foam, water fog or carbon dioxide.
Special Fire fighting	
Procedures:	Water may be ineffective but can be used to cool containers exposed to heat or flame. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid.
Unusual Fire &	
Explosion Hazards:	Dense smoke may be generated while burning. Toxic fumes, gases or vapors may evolve on burning. Heavy flammable vapors may settle along ground level and low spots to create an invisible fire hazard. The vapors may extend to sources of ignition and flash back.
Byproducts of	Ŭ
Combustion	Oxides of C, Zn, Ca, P and S. Additional byproducts include hydrogen sulfide, alkyl mercaptans and other sulfides.
Autoignition	
Temperature:	Not determined.
Explosion Data:	Not determined. Care should always be exercised in dust/mist areas.
SECTION 6	ACCIDENTAL RELEASE MEASURES

Spill Control
 Procedures (Land):
 Immediately turn off or isolate any source of ignition (pilot lights, electrical equipment, flames, and heaters). Evacuate area and ventilate. Personnel wearing proper protective equipment should contain spill immediately with inert materials (sand, earth, chemical spill pads of cotton) by forming dikes. Dikes should be placed to contain spill in a manner that will prevent material from entering sewers and waterways. Large spill, once contained, may be picked up using explosion proof, non-sparking vacuum pumps, shovels, or buckets, and disposed of in suitable containers for disposal. If a large spill occurs notify appropriate authorities.
 Spill Control
 Procedures (Water):

SECTION 6	ACCIDENTAL RELEASE MEASURES (continued)
Waste Disposal Method:	All disposals must comply with federal, state, and local regulations. The material, if spilled or discarded may be a regulated waste. Refer to state and local regulations. Department of Transportation regulations may apply for transporting this material when spilled. See Section 14.
	CAUTION - If spilled material is cleaned up using a regulated solvent, the resulting waste mixture may be regulated.
SECTION 7	HANDLING AND STORAGE
Handling Procedures:	Keep containers closed when not in use. Do not transfer to unmarked containers. Fire extinguishers should be kept readily available. See NFPA 30 and OSHA 1910.106 Flammable and Combustible Liquids. Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld, or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.
Storage Procedures: Additional	Store containers away from heat, sparks, open flame, or oxidizing materials.
Information:	No additional information.
SECTION 8	EXPOSURE CONTROLS / PERSONAL PROTECTION
Personal Protection:	Applicable mainly to persons in repeated contact situations such as packaging of product, service/maintenance, and cleanup/spill control personnel.
Respiratory Protection:	None required if airborne concentrations are maintained below threshold limits listed on page 1. Otherwise a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. Where misting may occur, wear an MSHA/NIOSH approved (or equivalent) half-mask form dust/mist air- purifying respirator.
Eye Protection:	Eye protection is always recommended. If material is handled such that it could be splashed into the eyes, wear safety glasses with side shields or vented/splash proof goggles (ANSI Z87.1 or approved equivalent).
Hand Protection:	Impervious gloves such as neoprene or nitrile rubber to avoid skin sensitization and absorption.
Other Protection:	Use of an apron and over-boots of chemically impervious materials such as neoprene or nitrile rubber is recommended to avoid skin sensitization. If handling hot material use insulated protective equipment. Launder soiled clothes. Properly dispose of contaminated leather articles and other materials, which cannot be decontaminated.
Local Control	lies elements contribution when would a with motorial in an enclosed and
Measures: Other:	Use adequate ventilation when working with material in an enclosed area. Mechanical methods such as fume hoods or area fans may be used to reduce localized vapor/mist areas. If vapor or mist is generated when the material is heated or handled, adequate ventilation in accordance with good engineering practice must be provided to maintain concentrations below the specified exposure. Eyewash stations and showers should be available in areas where this material is used and stored. Consumption of food and drink should be avoided in work areas where product is present. Always wash hands and face with soap and water before eating, drinking, or smoking.

PHYSICAL AND CHEMICAL PROPERTIES

**SECTION 9** 

Reproductive Toxicity:

Vapar Brazaura	Negligible at STD (Standard Temperature and Dressure, 25°C at 1 ATM)
Vapor Pressure: API Gravity:	Negligible at STP (Standard Temperature and Pressure, 25°C at 1 ATM). 31.3° at 15.6°C (60°F) by ASTM D 1298
Density:	7.24 lb./gal at 15.6°C (60°F) by ASTM D 1298
Specific Gravity:	0.869 at 15.6°C (60°F) by ASTM D 1298
Solubility:	Negligible in water, soluble in hydrocarbon solvents.
Percent Volatile:	Negligible at STP.
Vapor Density,	
Air = 1:	>1 at STP
Evaporation Rate,	
n-Butyl Acetate = 1:	Negligible at STP.
Odor:	Mild petroleum hydrocarbon odor.
Appearance:	Amber, clear fluid .
Viscosity:	5.2 cSt at 100°C (212°F) by ASTM D 445.
	31.8 cSt at 40°C (104°F) by ASTM D 445.
Boiling Point:	Not determined. Expected to be >260°C (500°F).
Pour Point:	-35°C (-30°F) by ASTM D 97.
Molecular Weight:	Not determined.
C	
SECTION 10	STABILITY AND REACTIVITY
Stability:	Material is stable at room temperature and pressure.
Conditions To Avoid:	Avoid high temperatures and product contamination.
Incompatibility With	······································
Other Materials:	Avoid contact with acids and oxidizing materials.
Hazardous	· · · · · · · · · · · · · · · · · · ·
Decomposition	
Products:	Smoke, carbon monoxide and dioxide, and other aldehydes of incomplete
	combustion. Oxides of C, Zn, P, S. Hydrogen sulfide and alkyl mercaptans and
	other sulfides may be released.
Hazardous	
Polymerization:	Will not occur.
SECTION 11	TOXICOLOGICAL INFORMATION
Oral Toxicity:	Not determined.
Dermal Toxicity:	Not determined.
Inhalation Toxicity:	On rare occasions, prolonged and repeated exposure to oil mist poses a risk of
2	pulmonary disease such as chronic lung inflammation. This condition is usually
	asymptotic as a result of repeated small aspirations. Shortness of breath and
	cough are the most common symptoms. Based on data from similar materials.
Dermal Sensitization:	Prolonged or repeated contact may make skin more sensitive to other skin
	sensitizers. Based on data from similar materials.
Chronic Toxicity:	
	Not determined.
Carcinogenicity:	Not determined.
	Not determined. This product contains zinc alkyl dithiophosphates (ZDP). Several ZDPs have
Carcinogenicity:	Not determined. This product contains zinc alkyl dithiophosphates (ZDP). Several ZDPs have been reported to have weak mutagenic activity in cultured mammalian cells but
Carcinogenicity:	Not determined. This product contains zinc alkyl dithiophosphates (ZDP). Several ZDPs have been reported to have weak mutagenic activity in cultured mammalian cells but only at concentrations that were toxic to the test cells. We do not believe that
Carcinogenicity:	Not determined. This product contains zinc alkyl dithiophosphates (ZDP). Several ZDPs have been reported to have weak mutagenic activity in cultured mammalian cells but

Not determined.

SECTION 11	TOXICOLOGICAL INFORMATION (continued)
Teratogenicity: Other:	Not determined. This product contains petroleum base oils, which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils require a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).
<b>SECTION 12</b>	ECOLOGICAL INFORMATION
Environmental Toxicity: Environmental Fate:	This material may be toxic to aquatic organisms and should be kept out of sewage and drainage systems and all bodies of water. No data available.
<b>SECTION 13</b>	DISPOSAL CONSIDERATIONS
Waste Disposal: Disposal Considerations:	Under RCRA it is the responsibility of the user of the product to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state, and local laws. Place used, contaminated, or excess material into disposable containers and dispose of in a manner consistent with local and state regulations. Contact local
SECTION 14	environmental or health authorities for approved disposal of this material. Most used oil is reclaimed or incinerated. TRANSPORT INFORMATION
U.S. DOT Bulk Shipping Description: U.S. DOT Non-Bulk Shipping Description:	Does not apply to bulk oil shipping. Does not apply to non-bulk oil shipping.
U.S. DOT Identification Number: U.S. DOT Hazard Classification: Other:	Not applicable. Not applicable. See 49 CFR for additional requirements for descriptions, allowed modes of transport, and packaging. For more information concerning spills during transport, consult latest DOT Emergency Response Guidebook for Hazardous Materials Incidents, DOT P 5800.3.
<b>SECTION 15</b>	REGULATORY INFORMATION
Clean Water Act/Oil Pollution Act:	Under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Control Act of 1990, this material is considered an oil. Any spills or discharges that produce a visible sheen or film on surface of water, or in waterways, ditches, or sewers leading to surface water must be reported. Contact the National Response Center at 800-424-8802.

# **Cross Packaging Material Safety Data Sheet**

SECTION 15	REGULATORY INFO	ORMATION (con	tinued)
TSCA:	All components of this material are	listed in the U.S.	TSCA Inventory.
Other TSCA:	Not applicable.		
SARA Title III:	Section 302/304 Extremely Hazard	None.	
	Section 311, 312 Hazard Categoriz		
	Acute (immediate health e		Yes.
	Chronic (delayed health e	fiects):	No.
	Fire (hazard):		No. No.
	Reactivity (hazard): Pressure (sudden release	hozord):	No.
	Section 313 Toxic Chemicals:	nazaru).	INO.
	Section 313 Toxic Chemicals.	Zinc <0.10%.	
CERCLA:	For stationary sources - reportable		Not determined.
OEROEA.	Due to: Not app		Not determined.
	For moving sources - reportable qu		Not determined.
	Due to: Not app		Not dotominod.
	Recommend contacting the local		event of any type of spill to
	determine local reporting requirement		
California Prop. 65:	Not applicable.		·
-			
<b>SECTION 16</b>	OTHER INFORMATI	ON	
	NFPA 704	NPCA-HMIS	KEY
HEALTH:	1	1	0 = Minimal
FIRE:	1	1	1 = Slight
REACTIVITY:	0	0	2 = Moderate
SPECIFIC HAZARD:	NONE	N/A	3 = Serious
PROTECTION INDEX:	N/A	B	4 = Severe
TROTECTION INDEX:		D	4 - 000010
Precautionary Labels:	WARNING		
Treedutionary Eubers.	- NONE REQUIRED		
	rmulated in part with components en proprietary or trade secret materia		
	d by the material manufacturers or di		
Prepared by:	A. Searle		

Prepared by:	A. Searle
Creation Date:	10/05/01
Print Date:	10/11/02
File:	NAPA PSF

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ITW Permatex 10 Columbus Blvd. Hartford, CT 06106 USA Telephone: 1-87-Permatex (877) 376-2839 Emergency: 800-255-3924 (ChemTel) International Emergency: +01-813-248-0585

# **Material Safety Data Sheet**

1. PRODUCT IDENTIFICATION		
Product Name:	26MA POWERBEAD HIGH TEMP RED RTV SILICONE 7.25 OZ AE	
Item No:	81915	
Product Type:	Silicone (Barrier Pack)	

2. COMPOSITION/INFORMATION ON INGREDIENTS				
Component	Weight%	ACGIH; TLV-TWA	OSHA PEL	
POLY (DIMETHYLSILOXANE), HYDROXY TERMINATED 70131-67-8	>60	Not listed	Not listed	
AMORPHOUS SILICA 7631-86-9	5-15	Not listed	20 mppcf	
DISTILLATES (PETROLEUM), HYDROTREATED MIDDLE 64742-46-7	<7	5 mg/m ³	Not listed	
IRON OXIDE 1309-37-1	<5	5 mg/m ³	10 mg/m ³	
ETHYLTRIACETOXYSILANE 17689-77-9	<3	Not listed	Not listed	
METHYLTRIACETOXYSILANE 4253-34-3	<3	Not listed	Not listed	
TITANIUM DIOXIDE 13463-67-7	<2	10 mg/m ³	15 mg/m ³	
NITROGEN 7727-37-9	<3	Not listed	Not listed	
ACETIC ACID 64-19-7	0.5-2.0	5 mg/m ³	10 ppm; 25 mg/m ³	

### 3. HAZARDS IDENTIFICATION

Toxicity:

May cause eye and skin irritation. May irritate lips, gums, tongue, mouth, nose and throat. May irritate respiratory system upon frequent or prolonged use. ****When this product is exposed to moisture, acetic acid may be formed. Note: This product does not contain microcyrstalline silica. Eye and skin contact, ingestion, inhalation

Primary Routes of Entry: Signs and Symptoms of Exposure:

nptoms of Exposure: Acetic acid produced during curing irritates eyes, nose and throat...

Component	Weight%	NTP	ACGIH Carcinogens	IARC Carcinogen
AMORPHOUS SILICA	5-15			Group 3 Monograph 68, 1997
7631-86-9				
IRON OXIDE	<5		A4 - Not Classifiable	Group 3, Supplement 7 1987;
1309-37-1				Monograph 1 1972
TITANIUM DIOXIDE	<2	male rat-negative,	A4	Group 2B; Vol 93,2006; Vol
13463-67-7		female rat-negative,		47,1989
		male mice-negative,		
		female mice-negative		

**Aggravated Medical Condition:** 

Methyltriacetoxysilane: Eye, skin and pulmonary disorders.

4. FIRST AID MEASURES	
Ingestion:	Rinse mouth. If swallowed, DO NOT induce vomiting. Keep individual calm. Obtain medical attention.
Inhalation:	Move to fresh air in case of accidental inhalation of vapours. Obtain medical attention.
Skin Contact:	Wipe off material with paper towel or cloth. Wash off with soap and water. If skin irritation persists, call a physician.
Eye Contact:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

### FIRE FIGHTING MEASURES 5. Flash Point °F(C°): >200°F TCC **Recommended Extinguishing Media:** Carbon Dioxide, Dry Chemicals, Foam. ***Warning: This container is pressurized with nitrogen. Do not remove **Special Fire-Fighting Procedures:** rubber plug. Keep containers cool. Use equipment or shielding required to protect against bursting or venting of containers. Oxides of carbon, Oxides of nitrogen, Oxides of sulfur, Acetic acid, Metal Hazardous Products of Combustion: oxide fumes, Silica fume, Formaldehyde Contents under pressure. Heated cans may burst. Use equipment or **Unusual Fire/Explosion Hazards:** shielding to protect personnel from bursting containers. Not determined Lower Explosive Limit: Not determined **Upper Explosive Limit:**

### 6. ACCIDENTAL RELEASE MEASURES

Spill Procedures:

Eliminate all sources of ignition. Wipe or scrape up spill material. Maintain good ventilation for large spills. Place scrap material in a well-ventilated area and allow to cure to rubber. Clean up spills thoroughly as residue is slippery.

7. HANDLING AND Storage:	STORAGE Store away from heat, sparks or open flame. Do not store at temperatures above 100°F (38°C). Exposure to high temperatures may cause container to burst. Keep away from oxidizers. Store away from water or moisture.
Handling:	Avoid contact with skin and eyes. Do not wear contact lenses. Use only in a well ventilated area. Do not take internally. Wash hands before eating and smoking.

8. EXPOSURE CONTR	COLS/PERSONAL PROTECTION
Eyes:	Safety glasses.
Skin:	Neoprene or nitrile gloves recommended.
Ventilation:	General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits (or to the lowest feasible levels when limits have not been established) during the use of this product.
Respiratory Protection:	An approved organic vapor respirator should be worn when exposures are expected to exceed the applicable limits.
Comments:	When heated to temperatures above 300 degrees F. in the presence of air, this product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard and a known skin and respiratory sensitizer. Safe handling conditions may be maintained by keeping vapor concentrations below the OSHA permissible limit for formaldehyde

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Red paste
Odor:	Acetic acid
Boiling Point:	Not applicable, polymeric material
pH:	Does not apply
Solubility in Water:	Polymerized
Specific Gravity:	1.04
VOC(Wt.%):	3.0%; 0.25 lb/gal; 30 g/l
Vapor Pressure:	66 mm Hg
Vapor Density (Air=1):	>1
Evaporation Rate:	Not determined

### **10. STABILITY AND REACTIVITY**

Chemical Stability: Hazardous Polymerization: Incompatabilities: Conditions to Avoid: Stable at normal conditions Will not occur Polymerized by contact with moisture. Acetic acid liberated. Moisture while storing. Do not expose to heat or store at temperatures above 120 F. Oxides of carbon, Oxides of nitrogen, Oxides of sulfur, Acetic acid, Metal oxide fumes, Silica fume, Formaldehyde

Hazardous Products of Combustion:

# 11. TOXICOLOGICAL INFORMATION

See Section 3

### 12. ECOLOGICAL INFORMATION

No data available

### **13. DISPOSAL CONSIDERATIONS**

Recommended Method of Disposal:Disposal should be made in accordance with federal, state and local regulations.US EPA Waste Number:NH - Not a RCRA Hazardous Waste Material

### **14. TRANSPORTATION INFORMATION**

DOT (49CFR 172)		
U.S. Department of Transportation - DOT - 49 CFR (Ground)		
DOT Shipping Name:	Aerosols, Limited Quantity	
Hazard Class:	Class 2.2	
UN/ID Number:	UN 1950	
IATA (Air)		
Proper Shipping Name:	Consumer Commodity (Not more than 1 liter)	
Class or Division:	Class 9	
UN/ID Number:	ID 8000	
IMDG (Vessel)		
Proper Shipping Name:	Aerosols, Limited Quantity	
Hazard Class:	Class 2.2	
UN Number:	UN 1950	
Marine Pollutant:	None	

### **15. REGULATORY INFORMATION**

SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.

NONE

California Proposition 65: No California Prop 65 chemicals are known to be present at or above the No Significant Risk Level

TSCA Inventory Status: All components of this product are listed (or exempt) on the EPA TSCA inventory.

### **16. OTHER INFORMATION**

 Estimated NFPA Rating:
 HEALTH 1, FLAMMABILITY 1, REACTIVITY 0.

 Estimated HMIS Classification:
 HEALTH 1, FLAMMABILITY 1, PHYSICAL HAZARD 0

 (NFPA is a registered trademark of the National Fire Protection Association)
 HMIS is a registered trademark of the National Paint and Coatings Association

Prepared By:	Denise Boyd, Manager-Environmental, Health & Safety	Revision Date: February 02, 2012
Company:	ITW Permatex 10 Columbus Blvd. Hartford, CT USA 06106	Revision Number: 7
Telephone No.:	1-87-Permatex (877) 376-2839	

Initial Preparation Date:1/06/1993Last Revision Date:1/13/2011Effective Date:6/27/2013

### MATERIAL SAFETY DATA SHEET

### **PRODUCT IDENTITY: POWERCOOL ANTIFREEZE & COOLANT**

### 1. CHEMICAL PRODUCT & COMPANY INFORMATION

# OLD WORLD INDUSTRIES, LLC 4065 COMMERCIAL AVENUE NORTHBROOK, ILLINOIS 60062 PHONE: 847-559-2000 EMERGENCY PHONE: 1-800-424-9300 (CHEMTREC)

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Material</u>	CAS#	<u>% by Wt</u>	<u>PEL (OSHA)</u>	TLV (ACGIH)
Ethylene Glycol	107-21-1	90 - 95	50 ppm	50 ppm
Diethylene Glycol	111-46-6	0 - 5	None	None

### 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Slight odor.	May be fatal if swallowed.	Vapors can cause eye irritation.		
Lowest Known LD50 (Oral) Lowest Known LD50 (Skin)	107-21-1 107-21-1	5840 mg/kg (Rats) 9530 mg/kg (Rabbits)		
HAZARD RATING SYSTEM				
NFPA: HEALTH: 1	FLAMMABILITY: 1	REACTIVITY: 0		
HMIS: HEALTH: 2	FLAMMABILITY: 1	REACTIVITY: 0		
KEY: 0-	- Minimal 1 – Slight 2 - M	Ioderate 3 - Serious 4 - Severe		

### POTENTIAL HEALTH EFFECTS

### Routes of Exposure: Inhalation, Ingestion, Skin Contact/Absorption, Eye Contact

**Eye:** May cause slight transient (temporary) eye irritation. Corneal injury is unlikely. Vapors or mists may cause eye irritation.

**Skin:** Prolonged or repeated exposure not likely to cause significant skin irritation. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Repeated skin exposure may result in absorption of harmful amounts. Massive contact with damaged skin or of material sufficiently hot to burn skin may result in absorption of potential lethal amounts.

**Ingestion:** Single dose oral toxicity is considered to be moderate. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing amounts larger than that may cause serious injury, even death.

**Inhalation:** At room temperature, exposures to vapors are minimal due to physical properties; higher temperatures may generate vapor levels sufficient to cause adverse effects.

**Systemic (Other Target Organ) Effects:** Repeated excessive exposures may cause severe kidney and also liver and gastrointestinal effects. Signs and symptoms of excessive exposure may be central nervous system effects. Signs and symptoms of excessive exposure may be nausea and/or vomiting. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects. Observations in animals include formation of bladder stones after repeated oral doses of ethylene glycol. Reports of kidney failure and death in burn patients suggest the ethylene glycol may have been a factor. The use of topical applications containing this material may not be appropriate in severely burned patients or individuals with impaired renal function.

**Cancer Information:** Based on data from long-term animal studies, ethylene glycol is not believed to pose a carcinogenic risk to man.

**Teratology (Birth Defects):** Exposure to ethylene glycol has caused birth defects in laboratory animals only at doses toxic to the mother.

**Reproductive Effects:** Ethylene glycol has not interfered with reproduction in animal studies except at very high doses.

### CHRONIC, PROLONGED OR REPEATED OVEREXPOSURE

**Effects of Repeated Overexposure**: Repeated inhalation of ethylene glycol mist may produce signs of central nervous system involvement, particularly dizziness and nystagmus.

**Other Effects of Overexposure**: repeated skin contact with ethylene glycol may, in a very small proportion of cases, cause sensitization with the development of allergic contact dermatitis. The incidence is significantly less than 1% with the undiluted material.

# 4. FIRST AID MEASURES Ensure physician has access to this MSDS.

### TREATMENT

**Eyes**: Immediately flush eyes with large amounts of water for 15 minutes, lifting lower and upper lids. Get medical attention as soon as possible. Contact lenses should never be worn when working with this chemical.

**Skin**: Flush area of skin contact immediately with large amounts of water for at least 15 minutes while removing contaminated clothing. If irritation persists after flushing, get medical attention promptly. Wash clothing before reuse.

**Inhalation**: If inhaled, immediately remove victim to fresh air and call *emergency medical care*. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Ingestion**: Obtain medical attention immediately. If patient is fully conscious, give two glasses of water. Do not induce vomiting. If medical advice is delayed, and if the person has swallowed a moderate volume of material (a few ounces), then give three to four ounces of hard liquor, such as whisky. For children, give proportionally less liquor, according to weight.

### Notes to Physician:

It is estimated that the lethal oral dose to adults is of the order of 1.0 ml/kg. Ethylene glycol is metabolized by alcohol dehydrogenate to various metabolites including glyceraldehydes, glycolic acid and oxalic acid which cause an elevated anion-gap metabolic acidosis and renal tubular injury. The signs and symptoms in ethylene glycol poisoning are those of metabolic acidosis, CNS depression, and kidney injury. Urinalysis may show albuminuria, hematuria and oxaluria. Clinical chemistry may reveal anion-gap metabolic acidosis and uremia. The currently recommended medical management of ethylene glycol poisoning includes elimination of ethylene glycol and metabolites, correction of metabolic acidosis and prevention of kidney injury. It is essential to have immediate and follow up urinalysis and clinical chemistry. There should be particular emphasis on acid-base balance and renal function tests. A continuous infusion of 5% sodium bicarbonate with frequent monitoring of electrolytes and fluid balance is used to achieve correction of metabolic acidosis and forced diuresis. As a competitive substrate for alcohol dehydrogenase, ethanol is antidotal. Given in the early stages of intoxication, it blocks the formulation of nephrotoxic metabolites. A therapeutically effective blood concentration of ethanol is in the range 100-150 mg/dl, and should be achieved by a rapid loading dose and maintained by intravenous infusion. For severe and/or deteriorating cases, hemodialysis may be required. Dialysis should be considered for patients who are symptomatic, have severe metabolic acidosis, a blood ethylene glycol concentration greater than 25 md/dl, or compromise of renal functions.

A more effective intravenous antidote for physician use is 4-methylpyrazole, a potent inhibitor of alcohol dehydrogenases, which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures, and renal failure have occurred. A generally recommended protocol is a loading dose of 15 mg/kg followed by 10 mg/kg every 12 hours for 4 doses and then 15 mg/kg every 12 hours until ethylene glycol concentrations are below 20 mg/100 ml. Slow intravenous infusion is required. Since 4-methyplyrozole is dialyzable, increased dosage may be necessary during hemodialysis. Additional therapeutic measures may include the administration of cofactors involved in the metabolism of ethylene glycol. Thiamine (100 mg) and pyridoxine (50 mg) should be given every six hours.

Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. The mechanism of production has not been elucidated, but it appears to be non-cardiogenic in origin in several cases. Respiratory support with mechanical ventilation and positive end expiratory pressure may be required. There may be cranial nerve involvement in the late stages of toxicity from swallowed ethylene glycol. In particular, effects have been reported involving the seventh, eighth and ninth cranial nerves, presenting with bilateral facial paralysis, diminished hearing and dysphasia.

# 5. FIRE FIGHTING MEASURES

### **Flammable Properties**

Flash Point: 119°C (247°F) Method Used: Setaflash Autoignition Temperature: Autoignition temperature for ethylene glycol is 398°C (748°F).

**Flammability Limits -** % of vapor concentration at which product can ignite in presence of spark. Lower Flammability Limit: 3.2% Upper Flammability Limit: 15.3%

**Hazardous Combustion Products**: Hazardous combustion products may include and are not limited to carbon monoxide, carbon dioxide and trace amounts of aldehydes and organic acids. When available oxygen is limited, as in a fire or when heated to very high temperatures by a hot wire or plate, carbon monoxide and other hazardous compounds such as aldehydes might be generated.

**Extinguishing Media**: Water fog or fine spray. Alcohol resistant foams (ATC type) are preferred if available. General purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively. Carbon dioxide. Dry chemical. Do not use direct water stream. May spread fire.

**Fire Fighting Instructions**: No fire and explosion hazards expected under normal storage and handling conditions (i.e. ambient temperatures). However, ethylene glycol or solutions of ethylene glycol and water can form flammable vapors with air if heated sufficiently. Keep people away. Isolate fire area and deny unnecessary entry.

**Protective Equipment for Fire Fighters**: Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire-fighting helmet, coat, pants, boots and gloves).

### 6. ACCIDENTAL RELEASE MEASURES

**Protect People**: Material is moderately toxic when ingested. Take adequate precautions to keep people, especially children away from spill site. PVC-coated rubber gloves and monogoggles or face shield can be used during cleanup of spill site. Product on surfaces can cause slippery conditions. Practice reasonable care and cleanliness. Avoid breathing spray mists if generated. Keep out of reach of children. Product may become a solid at temperatures below -18°C (0°F). Do not store near food, foodstuffs, drugs or potable water supplies.

**Protect the Environment**: Do not dump used product or diluted material into sewers, on the ground, or into any body of water.

**Cleanup**: Small spills: Soak up with absorbent material. Large spills: Dike and pump into suitable containers for disposal. Ensure compliance with all applicable statues that require notification of appropriate government officials.

### 7. HANDLING AND STORAGE

Steps to be Taken in Case Material is Released or Spilled: Eliminate all sources of ignition in vicinity of the spilled or released fluid.

**Other Precautions:** Use normal precautions in handling any combustible liquid. Keep container closed when not in use. Store away from heat or open flame. Product on surfaces can cause slippery conditions. Practice reasonable care and cleanliness. Avoid breathing spray mists if generated. Keep out of reach of children. Product may become a solid at temperatures below -18°C (0°F). Do not store near food, foodstuffs, drugs or potable water supplies.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Respiratory Protection**: Respiratory protection is required if airborne concentration exceeds TLV. At any detectable concentration any self-contained breathing apparatus with a full face piece and operated in a pressure-demand or other positive pressure mode or any supplied-air respirator with a full face piece and operated in a pressure-demand or other positive pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive pressure mode.

**Escape**: Any air-purifying full face piece respirator (gas mask) with a chin-style or front- or back-mounted organic vapor canister or any appropriate escape-type self-contained breathing apparatus.

**Skin Protection**: Protective gloves recommended when prolonged skin contact cannot be avoided. Polyethylene; Neoprene; Nitrile; Polyvinyl alcohol; Natural Rubber, Butyl Rubber. Safety shower should be available.

**Eye Protection**: Safety goggles and face shield. Emergency eyewash should be available. Contact lenses should not be worn when working with this chemical.

Engineering Controls: Use general or local exhaust ventilation to meet TLV requirements.

EXPOSURE LIMITS		
<u>Component</u>	Exposure Limits	<u>Skin Form</u>
Ethylene glycol	100 mg/m3 CEILING ACGIH	Aerosol
Ethylene glycol	125 mg/m3 CEILING OSHA-vacated	
	50 ppm CEILING OSHA – vacated	
	100 mg/m3 CEILING UCC	Aerosol and Vapor
Diethylene glycol	50 ppm TWA8 AIHA WEEL	Aerosol and Vapor
Diethylene glycol	10 mg/m3 TWA8 AIHA WEEL	Aerosol

In the Exposure Limits Chart above, if there is no specific qualifier (i.e., Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

A "blank" in the Skin column indicates that exposure by the cutaneous (skin) route is not a potential significant contributor to overall exposure.

### 9. PHYSICAL / CHEMICAL PROPERTIES

Boiling Range:	171 - 175°C (339 - 348°F)
Freeze Point:	-18°C (0°F)
Specific Gravity (Water =1):	1.12
Pounds/Gallons:	9.3
Vapor Pressure (mm of Hg) @ 20C:	< 0.1
Vapor Density (air=1):	2.1
Water Solubility:	Complete
<b>Evaporation Rate (BuAc = 1)</b> :	Nil
% Volatile By Volume:	97.0
Appearance:	Pink
Odor:	Mild
pH (50% Water Solution):	10.2-10.6

### 10. STABILITY & REACTIVITY DATA

Stability: Conditions to Avoid: Incompatibility (Materials to Avoid): Hazardous Decomposition Products: Hazardous Polymerization: Stable Keep away from flame Strong acid or oxidizing agents Incomplete combustion may produce CO gas Will not occur

### **11. TOXICOLOGICAL INFORMATION**

Skin: The dermal LD50 has not been determined.

**Ingestion**: The lethal dose in humans is estimated to be 100 ml (3 ozs.). The oral LD50 for rats is in the 6000-13,000-mg/kg range.

**Mutagenicity** (The Effects on Genetic Material): In vitro mutagenicity studies were negative. Animal mutagenicity studies were negative.

Significant Data with Possible Relevance to Humans: Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations or doses. The no-effect doses for developmental toxicity for ethylene glycol given by gavage over the period of organogenesis has been shown to be 150 mg/kg/day for the mouse and 500 mg/kg/day for the rat. Also, in a preliminary study to asses the effects of exposure of pregnant rats and made to aerosis at concentrations of 150, 1000 and 25000 mg/m3 for 6 hours a day throughout the period of organogenesis, teratogenic effects were produced at the highest concentration, but only in mice. The conditions of these latter experiments did not allow a conclusion as to whether the developmental toxicity was mediated by inhalation of aerosol percutaneous absorption of ethylene glycol from contaminated skin, or swallowing ethylene glycol as a result of grooming the wetted coat. In a further study, comparing effects from high aerosol concentration by whole-body or nose-only exposure, it was shown that noseonly exposure resulted in maternal toxicity (1000 and 25000 mg/m3) and developmental toxicity with minimal evidence of teratogenicity (2500 mg/m3). The no-effects concentration (based on maternal toxicity) was 500 mg/m3. In a further study in mice, no teratogenic effects could be produced when ethylene glycol was applied to skin of pregnant mice over the period of organogenesis. The above observations suggest that ethylene glycol is to be regarded as an animal teratogen. There is currently no available information to suggest that ethylene glycol has caused birth defects in humans. Cutaneous application of ethylene glycol is ineffective in producing developmental

Powercool Antifreeze

toxicity. Exposure to high aerosol concentrations is only minimally effective in producing developmental toxicity. The major route for producing developmental toxicity is perorally. Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol causes dose-related increases in tumor incidence or a different pattern of tumors compared with untreated controls. The absence of carcinogenic potential for ethylene glycol has been supported by numerous in vitro genotoxicity studies showing that it does not produce mutagenic or clastogenic effects.

A chronic dietary feeding study of diethylene glycol with rats showed mild kidney injury at 1%, while concentrations of 2% and 4% caused more marked kidney injury. In addition, at 2% and 4% of diethylene glycol in the diet, some rats developed benign papillary tumors in the urinary bladder. These have been attributed to the presence of urinary bladder calcium oxalate stones. No evidence for carcinogenicity was found with a chronic skin-painting study with diethylene glycol in mice. The absence of a direct chemical carcinogenic effect addords with the results in vitro genotoxicity studies that show that it does not produce mutagenic or clastogenic effects. A feeding study employing up to 5.0% diethylene glycol in the diet failed to produce any teratogenic effects. In a mouse continuous breeding study with large doses of diethylene glycol in drinking water, there was evidence for reproductive toxicity at 3.5% (equivalent to 6.1 g/kg/day) as reduced number of litter, live pups per litter and live pup weight. No such effects were seen at 1.75% (approximately 3.05 g/kg/day). The relevance of these very high dosages to human health is uncertain. Pregnant rats receiving undiluted diethylene glycol by gavage over the period of organogenesis had toxic effects at 4.0 and 8.0 ml/kg/day as mortality, decreased body weight, decreased food consumption increased water consumption and increased liver and kidney weights. Fetotoxicity was seen only at these maternally toxic dosages. Decreased fetal body weight occurred at 8.0 ml/kg/day, and increased skeletal variants at 4.0 and 8.0 ml/kg/day. No embryotixic or teratogenic effects were seen. Neither maternal toxicity nor fetotoxicity occurred at 1.0 ml/kg/day. In a study with mice also receiving undiluted diethylene glycol over the period of organogenesis, maternal toxicity occurred at 2.5 and 10.0 ml/kg/day, but not at 0.5 ml/kg/day. Definitive developmental toxicity was not seen in this species.

### **ACUTE TOXICITY**

**Peroral**: The lethal dose in humans is estimated to be 3 oz. or 100 ml. Rat: LD50 (6000 – 13000) mg/kg

### **Percutaneous**:

Rabbit: LD50 = >22270 mg/kg; 24 h occluded

### Inhalation:

Rat: 8-hour exposure, substantially saturated vapor studies, dynamic generation method

Mortality: 0/6

Inhalation: Mist/vapor study, rat, at 170°C, 8-hour exposure = 2.2 mg/l

### Mortality: 0/6

### Inhalation:

Rat: 8-hour exposure, fog = 10000 ppm;  $65^{\circ}$  -  $70^{\circ}$ C

Mortality: 0/6

### **IRRITATION**

Skin:

Rabbit: 24-hour occluded contact, 0.5 ml Results: Minor erythema and edema

Skin:

Human: Primary irritation patch test, 48-hour occluded, 0.2 ml Results: Evidence of irritation

Eye:

Rabbit: 0.1 ml Results: Minor transient iritis, conjunctival irritation with discharge

### **REPEATED EXPOSURE**

In a 7-day dietary study with rats, a significant increase in kidney weights in females was observed at 5.0 gm/kg. The NOEL was 2.5 gm/kg.

In a 24-month dietary study with rats, increased mortality in males was observed at the highest dose, 1.0 gm/kg/day. There were multiple signs: mineralization of several organs, including the cardiac vessels, cardiac muscle, vas deferens, stomach and pulmonary vessels; cellular hyperplasia of the parathyroids, hemosiderosis of the spleen, myocardial fibrosis, portal fibrosis of the liver, bile duct hyperplasia and hydronephrosis and oxylate nephrosis of the kidneys. Ethylene glycol was not oncogenic.

In a 90-day dietary study with dogs, repeated exposures to 2.5 gm/kg resulted in acute renal failure and deaths. The NOAEL was 1.0 gm/kg.

### SENSITIZATION (ANIMAL AND HUMAN STUDIES)

Repeated skin contact with ethylene glycol may, in a very small proportion of cases, cause sensitization with the development of allergic contact dermatitis. The incidence is significantly less than 1% with the undiluted material.

### **REPRODUCTIVE TOXICITY**

A three-generation study indicated that ethylene glycol did not affect reproductive parameters at dietary concentrations up to 1.0 gm/kg/day in any generation.

### CHRONIC TOXICITY AND CARCINOGENICITY

Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol causes doserelated increases in tumor incidence or a different pattern of tumors compared with untreated controls. The absence of a carcinogenic potential for ethylene glycol has been supported by numerous in vitro genotoxicity studies showing that it does not produce mutagenic or clastogenic effects.

### **GENETIC TOXICOLOGY**

**In Vitro**: Ethylene glycol was devoid of genotoxic activity in an Ames test, forward gene mutation and sister chromatid exchange (SCE) studies in Chinese Hamster Ovary (CHO) cells and an in vitro cytogenetics study.

**In Vivo**: Ethylene glycol by three different routes (intravenous, peroral and percutaneous) demonstrates apparent first-order pharmacokinetic behavior for the disposition in and the elimination from the plasma. Dose-dependent changes occur for the elimination of metabolites in the urine and as 14CO² after single doses for the intravenous and peroral, but not the percutaneous route. The hypothesis from literature sources exists that developmental toxicity is caused by a metabolite of ethylene glycol, called glycolic acid, and not parent ethylene glycol. Under most conditions of ethylene glycol exposure, the glycolic acid metabolite is present in the blood in very low levels. However, it can become the major metabolite following large doses of ethylene glycol due to saturation of glycolic acid oxidation and/or elimination. When levels of this acidic metabolite exceed the capacity of maternal blood buffers to neutralize it, a maternal metabolic acidosis ensues, which has been hypothesized to be the true agent responsible for ethylene glycol induced developmental toxicity. Research suggests that ethylene glycol developmental toxicity is due to a dose-rate dependent toxicokinetic shift leading to glycolate accumulation and metabolic acidosis.

### **ADDITIONAL STUDIES**

Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations or doses. The no-effect doses for developmental toxicity for ethylene glycol given by gavage over the period of organogenesis has been shown to be 150 mg/kg/day for the mouse and 500 mg/kg/day for the rat. Also, in a preliminary study to assess the effects of exposure of pregnant rats and mice to aerosols at concentrations of 150, 1000 and 2500 mg/m³ for 6 hours a day throughout the period of organogenesis, teratogenic effects were produced at the highest concentration, but only in mice. The conditions of these latter experiments did not allow a conclusion as to whether the developmental toxicity was mediated by inhalation of aerosol, percutaneous absorption of ethylene glycol from contaminated skin, or swallowing of ethylene glycol as a result of grooming the wetted coat. In a further study, comparing effects from high aerosol concentration by wholebody or nose-only exposure, it was shown that nose-only exposure resulted in maternal toxicity (1000 and 2500 mg/m³) and developmental toxicity with minimal evidence of teratogenicity (2500 mg/m³). The no-effects concentration (based on maternal toxicity) was 500 mg/m³. In a further study in mice, no teratogenic effects could be produced when ethylene glycol was applied to the skin of pregnant mice over the period of organogenesis. The above observations suggest that ethylene glycol is to be regarded as an animal teratogen. There is currently no available information to suggest that ethylene glycol has caused birth defects in humans. Cutaneous application of ethylene glycol is ineffective in producing developmental toxicity. Exposure to high aerosol concentrations is only minimally effective in producing developmental toxicity.

### **12. ECOLOGICAL INFORMATION**

### ENVIRONMENTAL FATE

**Movement & Partitioning**: Bioconcentration potential is low (BCF less than 100 or Log Kow less than 3). Log octanol/water partition coefficient (log Kow) is -1.36. Henry's Law Constant (H) is 6.0E-08 atm-m3/mol. Bioconcentration factor (BCF) is 10 in golden orfe.

**Degradation & Transformation**: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD greater than 40%). 5-Day biochemical oxygen demand (BOD5) is 0.78 p/p. 10-Day biochemical oxygen demand (BOD10) is 1.06 p/p. 20-Day biochemical oxygen demand (BOD20) is 1.15 p/p. Theoretical oxygen demand (THOD) is calculated to be 1.29 p/p. Biodegradation may occur under both aerobic and anaerobic conditions (in either the presence or absence of oxygen). Inhibitory concentration (IC50) in OECD "Activated Sludge, Respiration Inhibition Test" (Guideline # 209) is < 1000 mg/L. Degradation is expected in the atmospheric environment within days to weeks.

**Ecotoxicology**: Material is practically non-toxic to aquatic organisms on an acute basis (LC50 greater than 100 mg/L in most sensitive species). Acute LC50 for fathead minnow (Pimephales promelas) is 51000 mg/L. Acute LC50 for bluegill (Lepomis macrochirus) is 27549 mg/L. Acute LC50 for rainbow trout (Oncorhynchus mykiss) is about 18000-46000 mg/L. Acute LC50 for guppy (Poecilia reticulata) is 49300 mg/L. Acute LC50 for water flea (Daphnia magna) is 46300-51100 mg/L. Acute LC50 for the cladoceran Ceriodaphnia dubia is 10000-25800 mg/L. Acute LC50 for brine shrimp (Artemia salina) is 20000 mg/L. Acute LC50 for golden orfe (Leuciscus idus) is greater than 10000 mg/L. Acute LC50 for goldfish (Carassius auratus) is greater than 5000 mg/L. Growth inhibition EC50 for green alga Selenastrum capricornutum is 9500-13000 mg/L.

#### BOD (% Oxygen Consumption):

Day 5	Day 10	Day 15	Day 20	Day 30
51%	80%		97%	

#### **ECOTOXICITY**

#### Toxicity to Micro-organisms:

Bacterial / NA: 16 h; IC50 Result Value: >10000 mg/l

#### **Toxicity to Aquatic Invertebrates:**

Daphnia: 48 h; LC50 Result Value: >100000 mg/l

#### **Toxicity to Fish**

Fathead Minnow: 94 h; LC50 Result Value: 70000 mg/l

#### FURTHER INFORMATION

Chemical Oxygen Demand (COD) – Measured: 1.29 mg/mg Theoretical Oxygen Demand (THOD) – Calculated: 1.30 mg/mg

Octanol/Water Partition Coefficient - Measured: -1.36

## 13. DISPOSAL CONSIDERATIONS

**DO NOT** discharge to sewer. Wear appropriate personal protection. Take up with sand, vermiculite, or similar inert material. Dispose in accordance with federal, state and local regulations.

## 14. TRANSPORT INFORMATION

#### U.S. DEPARTMENT OF TRANSPORTATION Non-Bulk

Not regulated by the US D.O.T. (in quantities under 5,000 lbs in any one inner package)

#### Bulk

Proper Shipping Name:Environmentally Hazardous Substance, LIQUID N.O.S. (ETHYLENE GLYCOL)Technical Name:ETHYLENE GLYCOLID Number:UN 3082Hazard Class:9Packing Group:PG IIIReportable Quantity:5,000 lb.

#### IATA

Non-Bulk Not Regulated by IATA

## IMDG

**Non-Bulk** Not regulated by IMDG (in quantities under 5,000 lbs in any one inner package)

# CANADIAN TRANSPORTATION OF DANGEROUS GOODS REGULATIONS (TDG) Non-Bulk

Not regulated for transport by ground within Canada.

# **15. REGULATORY INFORMATION**

#### THIS PRODUCT CONTAINS COMPONENT(S) CITED ON THE FOLLOWING REGULATIONS.

	<u>Chemical Name</u> Ethylene Glycol	<u>Cas Number</u> 107-21-1
United States - TSCA Inventory:	Listed	
Water Standards:	No data available	
Atmospheric Standards:	Clean Air Act (1990) - List of Hazardous A	ir Contaminants: listed
CERCLA:	Reportable Quantity (RQ): 5,000 pounds (5	32 gallons)
OSHA Hazard Communication Standard:	This product is a "hazardous chemical" Communication Standard, 29 CFR 1910.12	
SARA Title III:	Section 311/312 - Categories: Acute hazar	d; chronic hazard
	Section 312 - Inventory Reporting: Ethyl Tier II annual inventory reporting.	lene glycol is subject to Tier I and/or
	Section 313 - Emission Reporting: Eth reporting requirements.	nylene glycol is subject to Form R
State Right-To-Know:	Section 302 - Extremely Hazardous Substan	nces: Ethylene glycol is not listed.

California - Exposure Limits - Ceilings:	vapor-50 ppm ceiling; 125 mg/m3 ceiling
Director's List of Hazardous Substances:	listed
Florida - Hazardous Substances List:	listed
Massachusetts - Right-to-Know List:	listed
Minnesota - Haz. Subs. List:	listed (particulate and vapor)
New Jersey - Right-to-Know List (Total):	Present greater than 1.0%
Pennsylvania Right-to-Know List:	environmental hazard

**Canadian Regulations**: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required.

**WHMIS Information: D2A** - material has potential toxic effects. Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

**Canadian Environmental Protection Act** (**CEPA**) All ingredients listed appear on the Domestic Substance List (DSL).

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**: The normal consumer use of this product does not result in exposure to chemicals known to the state of California to cause Cancer and/or reproductive harm above the significant risk level for carcinogens or the maximum allowable dose levels for reproductive toxins. Warnings are not required for consumer packaging. However, industrial or other occupational use of this product at higher frequency and using larger quantities of this product may result in exposures exceeding these levels and are labeled accordingly.

California SCAQMD Rule 443.1 (South Coast Air Quality Management District Rule 443.1, Labeling of Materials Containing Organic Solvents):

VOC: Vapor pressure 0.06 mmHg at 20°C 1113.38 g/l

#### **16. OTHER INFORMATION**

Contact: Thomas Cholke

Phone: (847) 559-2225

Old World Industries LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this MSDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.



Revision Date: 08/06/2012 Print Date: 7/10/2014 MSDS Number: 000000158928 Version: 3.2

Premium Blue[™] DIESEL EXHAUST FLUID 749714

# 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Ashland P.O. Box 2219 Columbus, OH 43216	Regulatory Information Number Telephone Emergency telephone number	1-800-325-3751 614-790-3333 1-800-ASHLAND (1-800-274- 5263)
Product name	Premium Blue [™] DIESEL EXHAUST FLUID	
Product code	749714	

# 2. HAZARDS IDENTIFICATION

## **Emergency Overview**

Appearance: liquid, liquid, colourless

# NOTICE: WHILE THIS MATERIAL HAS A LOW LEVEL OF TOXICITY, GOOD INDUSTRIAL HYGIENE PRACTICES ARE ENCOURAGED TO MINIMIZE EXPOSURE.

## **Potential Health Effects**

#### **Exposure routes**

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

#### Eye contact

May cause mild eye irritation. Symptoms include stinging, tearing, and redness.

#### Skin contact

May cause slight skin irritation.

#### Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

## Inhalation

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Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

# **Aggravated Medical Condition**

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material:, lung (for example, asthma-like conditions)

## **Symptoms**

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), Headache, Dizziness

# **Target Organs**

No data

# Carcinogenicity

This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

## **Reproductive hazard**

Based on the available information, risk to the fetus from maternal exposure to this material cannot be assessed.

# **3. COMPOSITION/INFORMATION ON INGREDIENTS**

Hazardous Components	CAS-No. / Trade Secret No.	Concentration
UREA	57-13-6	>=30-<40%

# 4. FIRST AID MEASURES

Eyes

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If symptoms develop, move individual away from exposure and into fresh air. Flush eyes gently with water while holding eyelids apart. If symptoms persist or there is any visual difficulty, seek medical attention.

## Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

#### Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

## Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

## Notes to physician

**Hazards:** No information available. **Treatment:** No information available.

# **5. FIREFIGHTING MEASURES**

#### Suitable extinguishing media

Dry chemical, Carbon dioxide (CO2), Water spray

#### Hazardous combustion products

acid vapors, Ammonia, carbon dioxide and carbon monoxide, nitrogen oxides (NOx)

## **Precautions for fire-fighting**

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

## 6. ACCIDENTAL RELEASE MEASURES



Revision Date: 08/06/2012 Print Date: 7/10/2014 MSDS Number: 000000158928 Version: 3.2

Premium Blue[™] DIESEL EXHAUST FLUID 749714

## **Personal precautions**

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

# **Environmental precautions**

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

## Methods for cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

# **Other information**

Comply with all applicable federal, state, and local regulations.

7. HANDLING	AND ST	ORAGE
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## Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

## Storage

Store in a cool, dry, ventilated area.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## **Exposure Guidelines**

UREA		57-13-6	
WEEL	time weighted average	10 mg/m3	Total particulate.

## **General advice**

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

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Premium BlueTM DIESEL EXHAUST FLUID 749714

#### **Exposure controls**

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

#### **Eye protection**

Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

#### Skin and body protection

Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use. Wear resistant gloves (consult your safety equipment supplier).

#### **Respiratory protection**

Respiratory protection is not required under normal conditions of use.

Physical state	liquid
Form	liquid
Colour	colourless
Odour	ammoniacal
рН	10
Flash point	
	not applicable
Vapour pressure	293.309 hPa
Density	1.09 g/cm3 @ 68 °F / 20 °C
	9.09 lb/gal @ 68 °F / 20 °C
Water solubility	soluble

## 9. PHYSICAL AND CHEMICAL PROPERTIES

## **10. STABILITY AND REACTIVITY**

Stability

Stable.

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Premium Blue[™] DIESEL EXHAUST FLUID 749714

#### **Conditions to avoid**

excessive heat

#### **Incompatible products**

Acids, Chlorine, nitrates, strong bases, Strong oxidizing agents

#### Hazardous decomposition products

acid vapors, Ammonia, carbon dioxide and carbon monoxide, nitrogen oxides (NOx)

#### **Hazardous reactions**

Product will not undergo hazardous polymerization.

# **11. TOXICOLOGICAL INFORMATION**

#### Acute oral toxicity

Acute oral toxicity -	: no data available	
Product		

#### Acute inhalation toxicity

Acute inhalation toxicity -	: no data available
Product	

## Acute dermal toxicity

Acute dermal toxicity - : no data available Product

# Acute toxicity (other routes of administration)

Acute toxicity (other : no data available routes of administration)

# **12. ECOLOGICAL INFORMATION**

## **Biodegradability**

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Biodegradability - Product : Remarks: Expected to be ultimately biodegradable

Bioaccumulation	1
Bioaccumulation	- Product : no data available
Bioaccumulation	1
UREA	: Species: Green algae (Chlorella fusca vacuolata) Exposure
UREA	: Species: Green algae (Chlorella fusca vacuolata) Exposure time: 24 h Concentration: 0.05 mg/l Bioconcentration

# **Ecotoxicity effects**

Toxicity	to	fish
----------	----	------

Toxicity to fish - Product	: LC 50: 9,100 mg/l
	Exposure time: 96 h

# Toxicity to daphnia and other aquatic invertebrates

Toxicity to daphnia and	: EC 50: 10,000 mg/l
other aquatic invertebrates	Exposure time: 24 h
- Product	Species: Water flea (Daphnia magna)

## Toxicity to algae

Toxicity to algae -	: no data available	
Product		

## Toxicity to bacteria

Toxicity to bacteria -	: no data available	
Product		

# **13. DISPOSAL CONSIDERATIONS**

# Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations.

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# **14. TRANSPORT INFORMATION**

#### REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. OTY.
U.S. DOT - RC	AD				7 <u>21</u> 2. Q 1 1.

Not dangerous goods

#### U.S. DOT - RAIL

Not dangerous goods

#### **U.S. DOT - INLAND WATERWAYS**

Not dangerous goods

#### **TRANSPORT CANADA - ROAD**

Not dangerous goods

#### TRANSPORT CANADA - RAIL

Not dangerous goods

#### TRANSPORT CANADA - INLAND WATERWAYS

Not dangerous goods

#### INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

#### INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

Not dangerous goods

#### INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods

# MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

Not dangerous goods

#### ***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**



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Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

# **15. REGULATORY INFORMATION**

#### California Prop. 65

This product does not contain any chemicals known to State of	
California to cause cancer, birth defects, or any other reproductive	
harm.	

# **SARA Hazard Classification**

## SARA 311/312 Classification

No SARA Hazards

#### **New Jersey RTK Label Information**

WATER	7732-18-5
UREA	57-13-6

#### **Pennsylvania RTK Label Information**

WATER	7732-18-5
UREA	57-13-6

#### **Notification status**

US. Toxic Substances Control Act	y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA).	y (positive listing)
Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	
Australia. Industrial Chemical (Notification and Assessment)	y (positive listing)
Act	
New Zealand. Inventory of Chemicals (NZIoC), as published	y (positive listing)
by ERMA New Zealand	
Japan. Kashin-Hou Law List	y (positive listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear	y (positive listing)
Waste Control Act	
China. Inventory of Existing Chemical Substances	y (positive listing)

## **Reportable quantity - Product**

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US. EPA CERCLA Hazardous Substances (40 CFR 302)

# **Reportable quantity-Components**

AMMONIUM HYDROXIDE ((NH4)(OH)) 1336-21-6

1000 lbs

500000 lbs

	HMIS	NFPA
Health	1	1
Flammability	0	0
Physical hazards	0	
Instability		0
Specific Hazard		

# **16. OTHER INFORMATION**

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

	Keptin Engr Shop 4113
THE TOP 11 - DV100 DFC.	Moistened Towelette Stn
MSDS: L0886 ORDER: 011967	73468 LP NUMBER: U661578140
MSDS. ECCCCC MATERIAL SAFETY DAT	
This MSDS should be attached or kept with the re- ####################################	spective product with which it is associated.
Associated Grainger Items SLDK7, SWEX2, 3NRU6, 3NRU1	EXPLOSION: VAPOR/AIR MIXTURES ARE EXPLOSIVE.
MATERIAL SAFETY DATA SHEET	11.7 DEG. C 80 DEG. F
	VOLATILE (* BY VOLAME): 98*
P/N#: 0350	EXP. LIMITS (VOL & IN AIR): UEL: 9.0%
NOMENCLATURE: LENS CLEANER	
COMPANY NAME: ALLECRO INDUSTRIES	AUTO IGNITION TEMPERATURE: 455 DEG. C SPECIAL FIRE FIGHTING PROC: HANDLE AS FLAMMABLE LIQUID.
ADDRESS: 7221 ORANGEWOOD AVENUE GARDEN GROVE, CA 92841. 714-899-9855	PPE FOR FIRE FIGHTERS: RESPIRATORY PROTECTION REQUIRED.
CHEMIRAC: 800-424-9300	
NFPA CODE: H 1 F 3	PROCEDURE FOR SPILL/LEAK:
F 3 R 0 O NONE	ABSORE WITH SAND AND SCOOP TO CONTAINER FOR PROPER DISPOSAL, DISPOSE OF SURPLUS AS HAZARDOUS WASTE.
	EVACUATE DANSER AREA. COLLECT LEAKING LIQUID IN SEALABLE CONTAINERS. ABSORB REMAINING LIQUID IN SAND OR INSERT ABSORBENT AND REMOVE TO SAFE PLACE.
CHEMICAL NAME: ISOPROPYL ALCOHOL	WASTE DISPOSAL: DISPOSE OF IN ACCORDANCE WITH CURRENT LAWS AND REGULATIONS.
CHEMICAL FAMILY: 2-PROPANOL	
SYNONYMS: DIMETHYL CARENOL, IPA, ISOPROPANOL, RUBBING ALCOHOL. MOLECULAR WEIGHT: 60.1	TORAGE:
MOLECULAR FORMULA: C3H80/(CH3)2CH0H	FLAME RESISTANT STORAGE CABINET. STORE IN TIGHT CONTAINERS IN A COOL DRY PLACE AWAY FROM LIGHT AND HEAT.
INGREDIENT: ISOPROPYL ALCOHOL CAS NUMBER: 67-63-0	SELF LIFE: 3 YEARS
PERCENT: 22% 3. HAZARDS IDENTIFICATION	PPE: DUE TO SMALL ANDUNTS, DISPENSED TO CLEAN GLASSES, PROTECTIVE EQUIPMENT IS OPTIONAL. USE PROTECTIVE COCCLES AND GLOVES IF HANDLING IN LARGE QUANTITIES.
PHYSICAL DANGERS: THE VAPOR MIXES WELL WITH AIR. EXPLOSIVE MIXTURES ARE BASILY FORMED.	NOTES: NONE
CHEMICAL DANGERS: REACTS WITH STRONG OXIDANTS.	
RCUIES OF EXPOSURE: THE SUBSTANCE CAN BE ABSORBED INTO THE EODY BY INHALATION OF ITS VAPOR BY INHALATION OF ITS AEROSOL AND BY INGESTION.	PPE: DUE TO SMALL AMOUNTS, DISPENSED TO CLEAN GLASSES, PROTECTIVE EQUIPMENT IS OPTIONAL.
TARGET ORGANS: EYES, NOSE, THROAT, CENIRAL NERVOUS SYSTEM, BLOOD, RESPIRATORY SYSTEM. HEALTH HAZARDS:	INHALATION: RESPIRATORY PROTECTION IF HANDLED IN LARGE QUANTITIES, OR ADEQUATE VENTILATION.
INHALATION:	SKIN: PROTECTIVE GLOVES.
MAY CAUSE IRRITATION. A HARMFUL CONTAMINATION OF THE AIR CAN BE REACHED QUICKLY ON EVAPORATION AT 20 DEG. C.	EYE: SAFETY COOGLES
SKIN CONTACT: MAY CAUSE REDNESS	INSESTION: DO NOT EAT, DRINK OR SMOKE WHEN HANDLING. VENTILATION: ADEQUATE VENTILATION WHEN HANDLING.
EYE CONTACT: MAY CAUSE IRRITATION INVESTION:	ENGINEERING CONTROLS: NONE
MAY CAUSE DIZZINESS, INCOORDINATION, HEADACHE, CONFUSION, COWA, ABDOMINAL PAIN, VOMITING, DIARRHEA,	WORK/HYGIENIC PRACTICES: WASH HANDS AFTER USE.
CHRONIC EXPOSURE:	EXPOSURE LIMITS:
REPEATED OR PROLONGED CONTACT WITH SKIN MAY CAUSE DERMATITIS ACUIE EXPOSURE:	CHEMICAL: ISOPROPYL ALCOHOL:
THE SUBSTANCE IRRITATES THE EYES, THE SKIN AND THE RESPIRATORY TRACT. THE SUBSTANCE MAY CAUSE EFFECTS ON THE CENTRAL MERVOUS SYSTEM RESULTING IN DEPRESSION. EXPOSURE FAR ADOVE THE CEL MAY RESULT IN INCONSCIOUSMESS. THE EFFECTS MAY BE DELAYED. MEDICAL OBSERVATION IS INDICATED.	TLV (ACGIH TLV): 400 PPM IDLH: 2000 PPM PEL (CSHA PEL): 400 PPM REL: 400 PPM
AGGRAVATION OF PRE-EX. COND: USE OF ALCOHOLIC BEVERAGES ENHANCES THE HARMFUL EFFECT.	STEL: 500 PPM CONIROL PARAMETER: N/A
- 4. FIRST AID MEASURES	
INHALATION: MOVE TO FREEH AIR, GIVE ARTIFICIAL RESPIRATION, IF NEEDED. PROVIDE OXYGEN	COLOR/APPEARANCE/ODOR: CLEAR LIQUID APPLIED TO FIBROUS WIPE,
IF BREATHING IS DIFFICULT. GET IMPEDIATE TREATMENT BY A PHYSICIAN. SKIN CONTACT: REPOVE CONTAMINATED CLOTHES. WASH WITH SOAP AND WATER.	BOILING POINT: 183 DEG, F 83 DEG, C
EYE CONTACT:	MELTING POINT: -90 DEG. C
FLUSH EYES WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. GET IMPEDIATE TREATMENT BY A PHYSICIAN.	SPECIFIC GRAVITY (H2O=1): 0.960
INGESTION: DO NOT INDUCE VOMITING. GET IMMEDIATE TREATMENT BY A PHYSICIAN.	REFRACTIVE INDEX: N/A
	RELATIVE DENSITY: 0.79 (WATER = 1) 1.05 (AIR = 1)
FIRE HAZARDS: HIGHLY FLAMABLE, KEEP AWAY FROM OPEN FLAMES, AND SPARKS	EVAPORATIVE RATE: N/A WATER CONTENT: N/A
FIRE EXTINGUISHER:	VAPOR DENSITY (AIR = 1); 2.1
CARBON DIOXIDE OR PONDER FOR SMALL FIRES. ALCOHOL RESISTANT FORM FOR LARGE FIRES, PONDER.	VAPOR PRESSURE: 4.4 KPA AT 20 DEG. C

DADITIONS TO AVOID: EXCESSIVE HEAT. SATELLAS TO AVOID: EMERANTS FROM STEAM OXIDANTS, ACETALDEHYDE, CHLORINE, EINFLENE OXIDE, (CIEC, ISOCTANATES: 		- 10. STABILITY AND REACTIVITY
ATERIALS TO AVOID: SERVARING FREM STREAM OXIDANIS, ACETALDEPIDE, CHLORINE, EIHYLENE OXIDE, CULLS, ISOCAMATES. 		
	ATERIALS TO AVOID: SEPARATE FROM STRONG ON	
HEALTH HEFFECTS: N/A ORAL LD50: 5940 MG/KG RAT DERMAL LD50: 1900 MG/KG RAT HUMAN LETHAL DOSE: 250 ML NOTES: CARCINGENICITY DATA: IMBRE HAS BEEN AN INCREASED INCIDENCE OF CANCER IN THE MANUFACTURE OF ISOPROPRYPTL OILS. IT IS NOT CLEAR WHICH SUBSTANCES ARE RESPONSIBLE.	iono, iocimento.	
OPAL LDS0: 5840 MG/KG RAT         DERMAL LDS0: 1900 MG/KG RAT         HUMAN LETHAL DOSE: 250 ML         NOTES:         CARCINOGENICITY DATA:         THESE HAS BEEN AN INCREASED INCIDENCE OF CANCER IN THE MANUFACTURE OF INSOROFMENT ALCOHOL BY THE STRONG ACID PROCESS, INVOLVING THE FORMATION         OP ISOPROPRYPYL OILS. IT IS NOT CLEAR WHICH SUBSTANCES ARE RESPONSIBLE.		- 11. TOXICOLOGICAL INFORMATION
DERMAL LD50: 1900 M3/KG RAT HUMAN LETHAL DOSE: 250 ML NOTES: CARCINOGENICITY DATA: HERE HAS BEEN AN INCREASED INCIDENCE OF CANCER IN THE MANUFACTURE OF ISOPROFIL ALCOHOL BY THE STRONG ACID PROCESS, INVOLVING THE FORMATION P ISOPROFIL ALCOHOL BY THE STRONG ACID PROCESS, INVOLVING THE FORMATION P ISOPROFIL ALCOHOL BY THE STRONG ACID PROCESS, INVOLVING THE FORMATION P ISOPROFIL ALCOHOL BY THE STRONG ACID PROCESS, INVOLVING THE FORMATION P ISOPROFIL ALCOHOL BY THE STRONG ACID PROCESS, INVOLVING THE FORMATION P ISOPROFIL ALCOHOL BY THE STRONG ACID PROCESS ARE RESPONSIBLE. P ISOPROFIL ALCOHOL BY THE STRONG ACID PROFILED NOT TO LET THE CHEMICAL ENTER INTO THE ENVIRONMENT IN LIQUID FORM. P ISOPROFIL PROFILE ON TO LET THE CHEMICAL ENTER INTO THE ENVIRONMENT IN LIQUID FORM. PROFER SHIPPING NAME: WIPES, CLEANING TRANSPORT EMERGENCY CARD: TEC (R)-544 PACKING GROUP: II UN NUMBER: 1219 REFORTABLE QUANTITY: N/A NOTES: N/A P ISOFA APPROVED: YES ICSC: 0554 P ISOFA APPROVED: YES ICSC: 0554 P ISOFA APPROVED: YES ICSC: 0554 P ISOFA APPROVED: THES INFORMATION PROFILE AND REPRESENTS THE INFORMATION FURNISHED HEREIN IS BELIEVED TO BE ACCURATE AND REPRESENTS THE INFORMATION FURNISHED HEREIN IS BELIEVED TO BE ACCURATE AND REPRESENTS THE INFORMATION FURNISHED HEREIN IS BELIEVED TO BE ACCURATE AND REPRESENTS THE INFORMATION FURNISHED HEREIN IS BELIEVED TO BE ACCURATE AND REPRESENTS THE INFORMATION FURNISHED MEREIN IS BELIEVED TO BE ACCURATE AND REPRESENTS THE INFORMATION FURNISHED MEREIN IS BELIEVED TO BE ACCURATE AND REPRESENTS THE INFORMATION FURNISHES ASSUMES NO LEGAL RESPONSIBILITY OR LIABILITY RESULTING FROM ITS USE. DATH REVISED: 10/07 NGO2	EALTH EFFECTS: N/A	
HUMAN LETHAL DOSB: 250 ML HUMAN LETHAL DOSB: 250 ML NOTES: CARCINGENICITY DATA: THERE HAS BEEN AN INCREASED INCIDENCE OF CANCER IN THE MANUFACTURE OF TSOPROFY. ALCOHOL BY THE STRONG ACLD PROCESS, INVOLVING THE FORMATION OF ISOPROFY. ALCOHOL BY THE STRONG ACLD PROCESS, INVOLVING THE FORMATION 	DRAL LD50: 5840 MG/KG	RAT
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CARCHNOGENICITY DATA: THERE HAS BEERI AN INCREASED INCIDENCE OF CANCER IN THE MANUFACTURE OF THERE HAS BEERI AN INCREASED INCIDENCE OF CANCER IN THE MANUFACTURE OF THE INCREASED INCIDENCE OF CANCER IN THE MANUFACTURE OF TOP ISOPROFRYPYL OILS. IT IS NOT CLEAR WHICH SUBSTANCES ARE RESPONSIBLE. 	HUMAN LETHAL DOSE: 25	0 ML
THERE HAS BEEN AN INCREASED INCIDENCE OF CANCER IN THE MANUFACTURE OF         ISOPROFIL ALCONCL BY THE STRONG ACID PROCESS, INVOLVING THE PORPATION         OF ISOPROFRYPYL OILS. IT IS NOT CLEAR WHICH SUBSTANCES ARE RESPONSIBLE.	NOTES:	
NONE AVAILABLE	THERE HAS BEEN AN INC. ISOPROPYL ALCOHOL BY '	THE STRONG ACLD PROCESS. INVOLVING THE FORMATION
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IT IS SIRONELY ADVISED NOT TO LET THE CHEMICAL ENTER INTO THE ENVIRONMENT IN LIQUID FORM. 		
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SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

# Chevron Havoline Pro DS Full Synthetic Motor Oil SAE 0W-20, 5W-20, 5W-30, 10W-30

Product Use: Automotive Engine Oil Product Number(s): 223501, 223502, 223503, 223505 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

Transportation Emergency Response CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information email : lubemsds@chevron.com Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

#### SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

#### SECTION 3 HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

- HARMFUL TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

#### IMMEDIATE HEALTH EFFECTS

**Eye:** Not expected to cause prolonged or significant eye irritation. **Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

**Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

#### SECTION 4 FIRST AID MEASURES

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

**Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

**Ingestion:** No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

#### SECTION 5 FIRE FIGHTING MEASURES

#### FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

#### FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 200 °C (392 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

#### **PROTECTION OF FIRE FIGHTERS:**

**Fire Fighting Instructions:** This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

#### SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in vicinity of spilled material.

**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with

applicable regulations.

**Reporting:** Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

#### SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:** Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Keep out of the reach of children.

**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

#### SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

#### **GENERAL CONSIDERATIONS:**

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

#### ENGINEERING CONTROLS:

Use in a well-ventilated area.

#### PERSONAL PROTECTIVE EQUIPMENT

**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

#### Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3			

Consult local authorities for appropriate values.

#### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Light to Brown Physical State: Liquid Odor: Petroleum odor pH: Not Applicable Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 Boiling Point: 315°C (599°F) Solubility: Soluble in hydrocarbons; insoluble in water Freezing Point: Not Applicable Specific Gravity: 7 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) (Typical) Density: 0.85 kg/l @ 15°C (59°F) (Typical) Viscosity: 41.6 - 63.2 mm2/s @ 40°C (104°F) Evaporation Rate: No data available

#### SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

#### SECTION 11 TOXICOLOGICAL INFORMATION

#### IMMEDIATE HEALTH EFFECTS

**Eye Irritation:** The eye irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Sensitization:** The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar

materials or product components.

#### ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3). During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

#### SECTION 12 ECOLOGICAL INFORMATION

#### ECOTOXICITY

This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

#### ENVIRONMENTAL FATE

**Ready Biodegradability:** This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

#### SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

#### SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

**IMO/IMDG Shipping Description:** NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

**ICAO/IATA Shipping Description:** NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

#### SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects: NO NO

NO

NO

NO

- 2. Delayed (Chronic) Health Effects:
- 3. Fire Hazard:
- 4. Sudden Release of Pressure Hazard:
- 5. Reactivity Hazard:

**REGULATORY LISTS SEARCHED:** 

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
-	07=PA RTK

No components of this material were found on the regulatory lists above.

#### CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States). One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

#### **NEW JERSEY RTK CLASSIFICATION:**

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

#### SECTION 16 OTHER INFORMATION

**NFPA RATINGS:** Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

#### LABEL RECOMMENDATION:

Label Category : ENGINE OIL 1 - ENG1

**REVISION STATEMENT:** This revision updates the following sections of this Safety Data Sheet: 1,2,3,12,16

Revision Date: May 01, 2014

#### ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet

CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.



#### Safety Data Sheet

# Section 1: Identification of the substance or mixture and of the supplier

# Product Name: SDS Number:

Synonyms/Other Means of Identification:

Propane 169570

Commercial Propane C3 (All) HD5 Propane LP-Gas Liquefied Petroleum Gas Odorized Propane Propane (Unstenched) Propane Commercial Propane Motor Fuel Propane for Process Stenched Propane Unodorized Propane

Intended Use:

Manufacturer:

**Emergency Health and Safety Number:** 

**SDS Information:** 

Fuel

ConocoPhillips 600 N. Dairy Ashford Houston, Texas 77079-1175

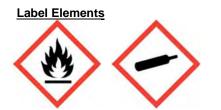
Chemtrec: 800-424-9300 (24 Hours)

Phone: 855-244-0762 Email: SDS@conocophillips.com URL: www.conocophillips.com

## Section 2: Hazard(s) Identification

**Classification** 

H220 -- Flammable gases -- Category 1 H280 -- Gases under pressure -- Liquefied gas



DANGER Extremely flammable gas. (H220)* Contains gas under pressure. May explode if heated. (H280)* Gas may reduce oxygen in confined spaces.

#### Precautionary Statement(s):

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. (P210)* Leaking gas fire: Do not extinguish, unless leak can be stopped safely. (P377)* Eliminate all ignition sources if safe to do so. (P381)* Protect from sunlight. Store in a well ventilated place. (P410+P403)*

* (Applicable GHS hazard code.)

#### Section 3: Composition / Information on Ingredients

Component	CASRN	Concentration ¹
Propane	74-98-6	80-100
Propylene	115-07-1	<20
Ethane	74-84-0	<6
n-Butane	106-97-8	<5
Isobutane	75-28-5	<2.5

¹ All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Odorized products contain small quantities (<0.1%) ethyl mercaptan as an olfactory indicator.

#### Section 4: First Aid Measures

**Eye Contact:** For contact with the liquefied gas, remove contact lenses if present and easy to do, hold eyelids apart and gently flush the affected eye(s) with lukewarm water. Seek immediate medical attention.

**Skin Contact:** Liquefied gases may cause cryogenic burns or injury. Treat burned or frostbitten skin by flushing or immersing the affected area(s) in lukewarm water. Do not rub affected area. Do not remove clothing that adheres due to freezing. After sensation has returned to the frostbitten skin, keep skin warm, dry, and clean. If blistering occurs, apply a sterile dressing. Seek immediate medical attention.

**Inhalation (Breathing):** If respiratory symptoms develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If breathing is difficult, oxygen or artificial respiration should be administered by qualified personnel. If symptoms persist, seek medical attention.

Ingestion (Swallowing): This material is a gas under normal atmospheric conditions and ingestion is unlikely.

#### Most important symptoms and effects

Acute: Anesthetic effects at high concentrations.

Delayed: None known or anticipated. See Section 11 for information on effects from chronic exposure, if any.

**Notes to Physician:** Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

#### Section 5: Fire-Fighting Measures



NFPA 704 Hazard Class

Health: 2 Flammability: 4 Instability: 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

**Unusual Fire & Explosion Hazards:** Extremely flammable. Contents under pressure. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Drains can be plugged and valves made inoperable by the formation of ice if rapid evaporation of large quantities of the liquefied gas occurs. Do not allow run-off from fire fighting to enter drains or water courses – may cause explosion hazard in drains and may reignite.

**Extinguishing Media:** Dry chemical or carbon dioxide is recommended. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

**Fire Fighting Instructions:** For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. If this cannot be done, allow fire to burn. Move undamaged containers from immediate hazard area if it can be done safely. Stay away from ends of container. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely.

**Hazardous Combustion Products:** Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

#### See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

#### Section 6: Accidental Release Measures

**Personal Precautions:** Extremely flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Beware of accumulation of gas in low areas or contained areas, where explosive concentrations may occur. Prevent from entering drains or any place where accumulation may occur. Ventilate area and allow to evaporate. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

**Environmental Precautions:** Stop spill/release if it can be done safely. Water spray may be useful in minimizing or dispersing vapors. If spill occurs on water notify appropriate authorities and advise shipping of any hazard.

Methods for Containment and Clean-Up: Notify relevant authorities in accordance with all applicable regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

#### Section 7: Handling and Storage

**Precautions for safe handling:** Keep away from ignition sources such as heat/sparks/open flame – No smoking. Take precautionary measures against static discharge. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Contents under pressure. Gas can accumulate in confined spaces and limit oxygen available for breathing. Use only with adequate ventilation. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Cold burns may occur during filling operations. Containers and delivery lines may become cold enough to present cold burn hazard.

Propane and odorant are heavier than air and will collect and pool along the ground or floor. Odorant, therefore, may not be detectable above the location of propane storage or service (for example, odorant in propane released or leaked into the basement of a dwelling may not be detected above the basement).

WARNING - The intensity of the odorant may fade over prolonged storage or in the presence of rust, when placed initially in new or freshly-cleaned storage vessels, or when exposed to masonry.

**Conditions for safe storage:** Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. Avoid exposing any part of a compressed-gas cylinder to temperatures above 125F(51.6C). Gas cylinders should be stored outdoors or in well ventilated storerooms at no lower than ground level and should be quickly removable in an emergency.

Component	ACGIH	OSHA	Other
Propane	TWA: 1000 ppm	TWA: 1000 ppm TWA: 1800	
•	as Aliphatic Hydrocarbon	mg/m ³	
	Gases: Alkane (C1-C4)	_	
Propylene	TWA: 500 ppm		
Ethane	TWA: 1000 ppm		
	as Aliphatic Hydrocarbon		
	Gases: Alkane (C1-C4)		
n-Butane	TWA: 1000 ppm		
	as Aliphatic Hydrocarbon		
	Gases: Alkane (C1-C4)		
sobutane	TWA: 1000 ppm		
	as Aliphatic Hydrocarbon		
	Gases: Alkane (C1-C4)		

#### Section 8: Exposure Controls / Personal Protection

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

**Eye/Face Protection:** The use of eye protection (such as splash goggles) that meets or exceeds ANSI Z.87.1 is recommended when there is potential liquid contact to the eye. Depending on conditions of use, a face shield may be necessary.

**Skin/Hand Protection:** Wear thermal insulating gloves and face shield or eye protection when working with materials that present thermal hazards (hot or cold).

**Respiratory Protection:** A NIOSH approved, self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode should be used in situations of oxygen deficiency (oxygen content less than 19.5 percent), unknown exposure concentrations, or situations that are immediately dangerous to life or health (IDLH).

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use.

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Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

#### Section 9: Physical and Chemical Properties

**Note:** Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance:	Colorless
Physical Form:	Liquefied Gas
Odor:	No distinct odor (or skunk, rotten egg or garlic if odorant added)
Odor Threshold:	No data
pH:	Not applicable
Vapor Pressure:	208 psia (Reid VP) @ 100°F / 37.8°C
Vapor Density (air=1):	>1
Initial Boiling Point/Range:	-44 °F / -42 °C
Melting/Freezing Point:	-309 °F / -189 °C
Solubility in Water:	Negligible
Partition Coefficient (n-octanol/water) (Kow):	No data
Specific Gravity (water=1):	0.50-0.51 @ 60°F (15.6°C)
Parcent Volatile:	100%
Specific Gravity (water=1):	0.50-0.51 @ 60°F (15.6°C)
Percent Volatile:	100%
Evaporation Rate (nBuAc=1):	>1
Flash Point:	-156 °F / -104 °C
Test Method:	Tag Closed Cup (TCC), ASTM D56
Lower Explosive Limits (vol % in air):	2.1
Upper Explosive Limits (vol % in air):	9.5
Auto-ignition Temperature:	842 °F / 450 °C

#### Section 10: Stability and Reactivity

Stability: Stable under normal ambient and anticipated conditions of use.

Conditions to Avoid: Avoid all possible sources of ignition. Heat will increase pressure in the storage tank.

Materials to Avoid (Incompatible Materials): Avoid contact with acids, aluminum chloride, chlorine, chlorine dioxide, halogens and oxidizing agents.

Hazardous Decomposition Products: Not anticipated under normal conditions of use.

Hazardous Polymerization: Not known to occur.

#### Section 11: Toxicological Information

#### Information on Toxicological Effects of Substance/Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful	Asphyxiant. High concentrations in confined spaces may limit oxygen available for breathing. See Signs and Symptoms.	> 20,000 ppm
Skin Absorption	Skin absorption is not anticipated		Not Applicable
Ingestion (Swallowing)	Ingestion is not anticipated		Not Applicable

#### Aspiration Hazard: Not applicable

Skin Corrosion/Irritation: Not expected to be irritating. Contact with the liquefied or pressurized gas may cause frostbite ("cold" burn).

**Serious Eye Damage/Irritation:** Not expected to be irritating. Contact with the liquefied or pressurized gas may cause momentary freezing followed by swelling and eye damage.

**Signs and Symptoms:** Light hydrocarbon gases are simple asphyxiants and can cause anesthetic effects at high concentrations. Symptoms of overexposure, which are reversible if exposure is stopped, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), rapid breathing, cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness and death.

Skin Sensitization: Skin contact is not anticipated.

Respiratory Sensitization: Not expected to be a respiratory sensitizer.

Specific Target Organ Toxicity (Single Exposure): Not expected to cause organ effects from single exposure.

Specific Target Organ Toxicity (Repeated Exposure): Not expected to cause organ effects from repeated exposure.

Carcinogenicity: Not expected to cause cancer. This substance is not listed as a carcinogen by IARC, NTP or OSHA.

Germ Cell Mutagenicity: Not expected to cause heritable genetic effects.

Reproductive Toxicity: Not expected to cause reproductive toxicity.

**Other Comments:** High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus. The odorant, ethyl mercaptan, can be irritating to the eyes, skin and respiratory tract. At high concentrations, a person can temporarily lose the ability to smell ethyl mercaptan. In addition, some individuals may have an impaired sense of smell, which inhibits the detection of the odorant.

#### Information on Toxicological Effects of Components

#### Propane _____

*Target Organs:* No systemic or neurotoxic effects were noted in rats exposed to concentrations of propane as high as 12,000 ppm for 28 days.

**Reproductive Toxicity:** No adverse reproductive or developmental effects were observed in rats exposed to propane; no observed adverse effect level = 12,000 ppm.

<u>n-Butane</u>

*Target Organs:* No systemic or neurotoxic effects were noted in rats exposed to concentrations of butane as high as 9,000 ppm for 28 days.

**Reproductive Toxicity:** No adverse reproductive or developmental effects were observed in rats exposed to butane; no observed adverse effect level = 12,000 ppm.

#### Isobutane

*Target Organs:* No systemic or neurotoxic effects were noted in rats exposed to concentrations of isobutane as high as 9,000 ppm for 28 days.

**Reproductive Toxicity:** No adverse developmental effects were observed in rats exposed to concentrations of isobutane as high as 9000 ppm. Fertility and mating indices may have been affected at 9000 ppm but no effects were observed at 3000 ppm (NOAEL).

#### Section 12: Ecological Information

**Toxicity:** Petroleum gases will readily evaporate from the surface and would not be expected to have significant adverse effects in the aquatic environment. Classification: No classified hazards.

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**Persistence and Degradability:** The hydrocarbons in this material are expected to be inherently biodegradable. In practice, hydrocarbon gases are not likely to remain in solution long enough for biodegradation to be a significant loss process. Hydrogen sulfide, if present in refinery gas streams, will be rapidly oxidized in water and insoluble sulfides precipitated from water when metallic radicals are present.

**Bioaccumulative Potential:** Since the log Kow values measured for refinery gas constituents are below 3, they are not regarded as having the potential to bioaccumulate.

**Mobility in Soil:** Due to the extreme volatility of petroleum gases, air is the only environmental compartment in which they will be found. In air, these hydrocarbons undergo photodegradation by reaction with hydroxyl radicals with half-lives ranging from 3.2 days for n-butane to 7 days for propane.

Other Adverse Effects: None anticipated.

#### Section 13: Disposal Considerations

This material is a gas and would not typically be managed as a waste.

#### Section 14: Transport Information

U.S. Department of Transportation	(DOT)
Shipping Description:	UN1978, Propane, 2.1,
Non-Bulk Package Marking:	Propane, UN1978
Non-Bulk Package Labeling:	Flammable gas
Bulk Package/Placard Marking:	Flammable gas / 1978
Packaging - References:	49 CFR: 173.306; 173.304; 173.314 & .315
00	(Exceptions; Non-bulk; Bulk)
Hazardous Substance:	See Section 15 for RQ's
Emergency Response Guide:	115
Note:	For domestic transportation only, UN1075 may be substituted for the UN number
	shown as long as the substitution is consistent on package markings, shipping
	papers, and emergency response information. See 49 CFR 172.102 Special Provision
	19.
	Containers of NON-ODORIZED liquefied petroleum gas must be marked either NON- ODORIZED or NOT ODORIZED as of September 30, 2006. [49 CFR 172.301(f), 326(d),
	330(c) and 338(e)]
	The following alternate shipping description order may be used until January 1,
	2013:
	Proper Shipping name, Hazard Class or Division, (Subsidiary Hazard if any), UN or NA number, Packing Group
	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not
	applicable
	Other shipping description elements may be required for DOT compliance.
International Maritime Dangerous G	Goods (IMDG)
Shipping Description:	UN1978, Propane, 2.1
Non-Bulk Package Marking:	Propane, UN1978
Labels:	Flammable gas
Placards/Marking (Bulk):	Flammable gas / 1978
Packaging - Non-Bulk:	P200
EMS:	F-D, S-U
Emo.	
International Civil Aviation Org / In	ternational Air Transport Assoc. (ICAO/IATA)
UN/ID #:	UN1978
Proper Shipping Name:	Propane
Hazard Class/Division:	2.1
Non-Bulk Package Marking:	Propane, UN1978
Labels:	· · ·
ERG Code:	Flammable gas 10L
	IVL

Note:

Special provision A1 applies to this product.

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	Forbidden	Forbidden	200
Max. Net Qty. Per Package:	Forbidden	Forbidden	150 kg

#### Section 15: Regulatory Information

#### CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)		
Acute Health:	Yes	
Chronic Health:	No	
Fire Hazard:	Yes	
Pressure Hazard:	Yes	
Reactive Hazard:	No	

#### CERCLA/SARA - Section 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Component	Concentration ¹	de minimis
Propylene	<20	1.0%

#### EPA (CERCLA) Reportable Quantity (in pounds):

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

#### California Proposition 65:

This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

WARNING: Chemicals known to the State of California to cause cancer, birth defects or other reproductive harm are created by the combustion of Propane.

#### International Hazard Classification

#### Canada:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Regulations.

#### WHMIS Hazard Class:

A - Compressed Gas

B1 - Flammable Gases

#### **National Chemical Inventories**

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA All components are either on the DSL, or are exempt from DSL listing requirements

#### U.S. Export Control Classification Number: EAR99

#### Section 16: Other Information

Date of Issue: Status: Previous Issue Date: Revised Sections or Basis for Revision: SDS Number:

17-Aug-2012 FINAL 02-Apr-2012 Regulatory information (Section 15) 169570 _____

#### **Guide to Abbreviations:**

ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

#### **Disclaimer of Expressed and implied Warranties:**

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

# HALLIBURTON

# **MATERIAL SAFETY DATA SHEET**

**Product Trade Name:** 

**QUIK-FOAM®** 

Revision Date:

06-Jan-2005

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: Synonyms: Chemical Family: Application:	QUIK-FOAM® None Blend Foaming Agent
Manufacturer/Supplier	Baroid Drilling Fluids a Product Service Line of Halliburton Energy Services, Inc. P.O. Box 1675 Houston, TX 77251 Telephone: (281) 871-4000 Emergency Telephone: (281) 575-5000
Prepared By	Chemical Compliance Telephone: 1-580-251-4335

# 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Isopropanol	67-63-0	5 - 10%	200 ppm	400 ppm
Ethanol	64-17-5	5 - 10%	1000 ppm	1000 ppm

# 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be absorbed through the skin. May be harmful if swallowed. Repeated overexposure may cause liver and kidney effects. Flammable.

#### 4. FIRST AID MEASURES

Inhalation	If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.	
Skin	In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.	
Eyes	In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.	
Ingestion	Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.	
Notes to Physician	Not Applicable	
QUIK-FOAM®		

# 5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Flash Point/Range (C): Flash Point Method: Autoignition Temperature (F): Autoignition Temperature (C): Flammability Limits in Air - Lowe Flammability Limits in Air - Uppe	· · ·	74 23 PMCC 750 398 2 12
Fire Extinguishing Media	Water fog, carbon dioxide, foam, dry chemical.	
Special Exposure Hazards	May be ignited by heat, sparks or flames. Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce toxic gases.	
Special Protective Equipment for Fire-Fighters	Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.	
NFPA Ratings: HMIS Ratings:	Health 1, Flammability 3, Reactivity 0 Flammability 3, Reactivity 0, Health 1	

# 6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures	Prevent from entering sewers, waterways, or low areas.
Procedure for Cleaning /	Isolate spill and stop leak where safe. Remove ignition sources and work with non-
Absorption	sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

# 7. HANDLING AND STORAGE

Handling Precautions	Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another.
Storage Information	Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 24 months.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.
Respiratory Protection	Organic vapor respirator.
Hand Protection	Impervious rubber gloves.
Skin Protection	Rubber apron.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

Partition Coefficient/n-Octanol/Water:Not DeterminedMolecular Weight (g/mole):Not Determined
----------------------------------------------------------------------------------------------

# 10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers. Strong alkalis.
Hazardous Decomposition Products	Oxides of sulfur. Oxides of nitrogen. Ammonia. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

# **11. TOXICOLOGICAL INFORMATION**

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin irritation. May be absorbed through the skin and produce effects similar to those caused by inhalation and/or ingestion.
Eye Contact	May cause eye irritation.
Ingestion	Irritation of the mouth, throat, and stomach. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions. May cause kidney damage.
Aggravated Medical Conditions	None known.

Chronic Effects/Carcinogenicity Repeated overexposure may cause liver and kidney effects.

Other Information None known.

#### **Toxicity Tests**

Oral Toxicity:	LD50: 5840 mg/kg (Rat)
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

## 12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not Determined

# **Ecotoxicological Information**

Acute Fish Toxicity: Acute Crustaceans Toxicity: Acute Algae Toxicity:	Not determined Not determined Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

# 13. DISPOSAL CONSIDERATIONS

Disposal Method	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

# 14. TRANSPORT INFORMATION

## Land Transportation

#### DOT Flammable Liquid, N.O.S., 3, UN1993, III, (23.3 C) (Contains Ethanol, Isopropanol) NAERG 128 Not Restricted when shipped in containers less than 119 gallons as authorized by 49 CFR 173.150(e)(1) and 49 CFR 173.150(f)(2).

## DOT BULK

#### **Canadian TDG**

Flammable Liquid, N.O.S.(Contains Ethanol, Isopropanol), 3, UN1993, III, (23.3 C)

#### ADR

UN1993, Flammable Liquid, N.O.S. (Contains Ethanol, Isopropanol), 3, III

# **Air Transportation**

#### ICAO/IATA

UN1993,Flammable Liquid, N.O.S., 3, III (Contains Ethanol, Isopropanol Solution)

## **Sea Transportation**

#### IMDG

UN1993,Flammable Liquid, N.O.S.(Contains Ethanol, Isopropanol), 3, III, (23.3 C) EmS F-E, S-E

## **Other Shipping Information**

Labels:

Flammable Liquid

# 15. REGULATORY INFORMATION

US TSCA Inventory	All components listed on inventory.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard Chronic Health Hazard Fire Hazard
EPA SARA (313) Chemicals	This product contains toxic chemical(s) listed below which is(are) subject to the reporting requirements of Section 313 of Title III of SARA and 40 CFR Part 372: Isopropanol//67-63-0
EPA CERCLA/Superfund Reportable Spill Quantity For This Product	Not applicable. s
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:
	Ignitability D001
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.
Conselier Desculations	

**Canadian Regulations** 

All components listed on inventory.

WHMIS Hazard Class

B2 Flammable Liquids D2B Toxic Materials

## 16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS Not applicable		
Additional Information	For additional information on the use of this product, contact your local Halliburton representative.	
	For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.	
Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.	
***END OF MSDS***		



**Product Trade Name:** 

QUIK-GEL®

 Revision Date:
 19-Dec-2011

 1.
 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: Synonyms: Chemical Family: Application:	QUIK-GEL® None Mineral Viscosifier
Manufacturer/Supplier	Baroid Fluid Services Product Service Line of Halliburton P.O. Box 1675 Houston, TX 77251 Telephone: (281) 871-4000 Emergency Telephone: (281) 575-5000
Prepared By	Chemical Compliance Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Bentonite	1302-78-9	60 - 100%	Not applicable	Not applicable
Crystalline silica, cristobalite	14464-46-1	0 - 1%	0.025 mg/m ³	1/2 x <u>10 mg/m³</u> %SiO2 + 2
Crystalline silica, tridymite	15468-32-3	0 - 1%	0.05 mg/m ³	1/2 x <u>10 mg/m³</u> %SiO2 + 2
Crystalline silica, quartz	14808-60-7	1 - 5%	0.025 mg/m ³	<u>10 mg/m³</u> %SiO2 + 2

More restrictive exposure limits may be enforced by some states, agencies, or other authorities.

#### CAUTION! - ACUTE HEALTH HAZARD

May cause eye and respiratory irritation.

#### DANGER! - CHRONIC HEALTH HAZARD

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

### 4. FIRST AID MEASURES

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Skin	Wash with soap and water. Get medical attention if irritation persists.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Ingestion	Under normal conditions, first aid procedures are not required.
Notes to Physician	Treat symptomatically.

### 5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Flash Point/Range (C): Flash Point Method: Autoignition Temperature (F): Autoignition Temperature (C): Flammability Limits in Air - Lowe Flammability Limits in Air - Uppe		Not Determined Not Determined Not Determined Not Determined Not Determined Not Determined
Fire Extinguishing Media	All standard firefighting	media.
Special Exposure Hazards	Not applicable.	
Special Protective Equipment for Fire-Fighters	Not applicable.	
NFPA Ratings: HMIS Ratings:	Health 0, Flammability Health 0*, Flammability	0, Reactivity 0 0, Physical Hazard 0,PPE: E

#### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary None known. Measures

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

### 7. HANDLING AND STORAGE

Handling Precautions	This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.
Storage Information	Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Keep from excessive heat. Do not reuse empty container. Product has a shelf life of 36 months.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.
Personal Protective Equipment	If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection	Not normally needed. But if significant exposures are possible then the following respirator is recommended: Dust/mist respirator. (95%)
Hand Protection	Normal work gloves.
Skin Protection	Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.
Eye Protection	Wear safety glasses or goggles to protect against exposure.
Other Precautions	None known.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Color: Odor: pH: Specific Gravity @ 20 C (Water=1): Density @ 20 C (lbs./gallon): Bulk Density @ 20 C (lbs/ft3): Boiling Point/Range (F): Boiling Point/Range (C): Freezing Point/Range (C): Freezing Point/Range (C): Vapor Pressure @ 20 C (mmHg): Vapor Density (Air=1): Percent Volatiles: Evaporation Rate (Butyl Acetate=1): Solubility in Water (g/100ml): Powder

Various Mild earthy 8-10 2.6 Not Determined 47.6-72.1 Not Determined Slightly soluble

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Solubility in Solvents (g/100ml): VOCs (lbs./gallon): Viscosity, Dynamic @ 20 C (centipoise): Viscosity, Kinematic @ 20 C (centistrokes): Partition Coefficient/n-Octanol/Water: Molecular Weight (g/mole): Not Determined Not Determined Not Determined Not Determined Not Determined

10. STABILITY AND REACTIVITY		
Stability Data:	Stable	
Hazardous Polymerization:	Will Not Occur	
Conditions to Avoid	None anticipated	
Incompatibility (Materials to Avoid)	Hydrofluoric acid.	
Hazardous Decomposition Products	Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).	
Additional Guidelines	Not Applicable	

## **11. TOXICOLOGICAL INFORMATION**

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).
	Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).
Skin Contact	May cause mechanical skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	None known
Aggravated Medical Conditions	Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

Chronic Effects/Carcinogenicity	<ul> <li>Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.</li> <li>Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).</li> <li>There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.</li> </ul>
Other Information	For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768 (1997).
Toxicity Tests	
Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Refer to <u>IARC Monograph 68, Silica, Some Silicates and Organic Fibres (</u> June 1997).
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

## 12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined

Bio-accumulation Not determined

## **Ecotoxicological Information**

Acute Fish Toxicity: TLM96: 10000 ppm (Oncorhynchus mykiss) Acute Crustaceans Toxicity:Not determined

QUIK-GEL® Page 5 of 7

Acute Algae Toxicity:	Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

## 13. DISPOSAL CONSIDERATIONS

Disposal MethodIf practical, recover and reclaim, recycle, or reuse by the guidelines of an approved<br/>local reuse program. Should contaminated product become a waste, dispose of in a<br/>licensed industrial landfill according to federal, state, and local regulations.Contaminated PackagingFollow all applicable national or local regulations.

#### 14. TRANSPORT INFORMATION

#### Land Transportation

#### DOT

Not restricted

#### **Canadian TDG**

Not restricted

ADR Not restricted

### **Air Transportation**

ICAO/IATA Not restricted

#### **Sea Transportation**

#### IMDG Not restricted

### **Other Transportation Information**

Labels:

15. REGULATORY INFORMATION

None

#### **US Regulations**

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard Chronic Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	The California Proposition 65 regulations apply to this product.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.
Canadian Regulations	
Canadian DSL Inventory	All components listed on inventory or are exempt.
WHMIS Hazard Class	D2A Very Toxic Materials Crystalline silica

## 16. OTHER INFORMATION

The following sections have be Section 7. Handling and Storage	en revised since the last issue of this MSDS
Additional Information	For additional information on the use of this product, contact your local Halliburton representative.
	For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.
Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

#### ***END OF MSDS***

QUIK-GEL® Page 7 of 7

## HALLIBURTON

# **MATERIAL SAFETY DATA SHEET**

**Product Trade Name:** 

**QUIK-TROL®** 

**Revision Date:** 

19-Nov-2010

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: Synonyms: Chemical Family: Application:	QUIK-TROL® None Carbohydrate Filtrate Reducer
Manufacturer/Supplier	Baroid Fluid Services Product Service Line of Halliburton P.O. Box 1675 Houston, TX 77251 Telephone: (281) 871-4000 Emergency Telephone: (281) 575-5000
Prepared By	Chemical Compliance Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Polysaccharide		60 - 100%	Not applicable	Not applicable

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** 

May cause eye, skin, and respiratory irritation. Airborne dust may be explosive.

### 4. FIRST AID MEASURES

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Skin	Wash with soap and water. Get medical attention if irritation persists.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Ingestion	Under normal conditions, first aid procedures are not required.
Notes to Physician	Not Applicable

## 5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Flash Point/Range (C): Flash Point Method: Autoignition Temperature (F): Autoignition Temperature (C): Flammability Limits in Air - Lowe Flammability Limits in Air - Uppe		
Fire Extinguishing Media	Water fog, carbon dioxide, foam, dry chemical.	
Special Exposure Hazards	Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.	
Special Protective Equipment for Fire-Fighters	or Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.	
NFPA Ratings: HMIS Ratings:	Health 1, Flammability 1, Reactivity 0 Health 1, Flammability 1, Physical Hazard 0 , PPE: A	

## 6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Avoid creating and breathing dust.

Environmental Precautionary Measures	None known.
Procedure for Cleaning / Absorption	Scoop up and remove.

### 7. HANDLING AND STORAGE

Handling Precautions	Avoid creating or inhaling dust. Avoid dust accumulations. Slippery when wet.
Storage Information	Store away from oxidizers. Store in a dry location. Product has a shelf life of 36 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.
Personal Protective Equipment	If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection	Not normally needed. But if significant exposures are possible then the following respirator is recommended: Dust/mist respirator. (95%)
Hand Protection	Normal work gloves.
Skin Protection	Normal work coveralls.
Eye Protection	Wear safety glasses or goggles to protect against exposure.
Other Precautions	None known.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

## 10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None known.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

## **11. TOXICOLOGICAL INFORMATION**

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause mild respiratory irritation.
Skin Contact	May cause mild skin irritation.
Eye Contact	May cause mild eye irritation.
Ingestion	None known
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.

#### **Toxicity Tests**

Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

### 12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined	
Persistence/Degradability	Readily biodegradable	

## Bio-accumulation Not determined

### **Ecotoxicological Information**

Acute Fish Toxicity:	Not determined
Acute Crustaceans Toxicity	Not determined
Acute Algae Toxicity:	Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

DOT Not restricted

Canadian TDG Not restricted

ADR Not restricted

## **Air Transportation**

### Sea Transportation

IMDG

Not restricted

## **Other Transportation Information**

Labels:

None

## 15. REGULATORY INFORMATION

#### **US Regulations**

US TSCA Inventory	All components listed on inventory or are exempt.		
EPA SARA Title III Extremely Hazardous Substances	Not applicable		
EPA SARA (311,312) Hazard Class	None		
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).		
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.		
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.		
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.		
MA Right-to-Know Law	Does not apply.		
NJ Right-to-Know Law	Does not apply.		
PA Right-to-Know Law	Does not apply.		
Canadian Regulations			
Canadian DSL Inventory	All components listed on inventory or are exempt.		
WHMIS Hazard Class	Un-Controlled		

## **16. OTHER INFORMATION**

The following sections have been revised since the last issue of this MSDS Not applicable

Additional InformationFor additional information on the use of this product, contact your local Halliburton<br/>representative.For questions about the Material Safety Data Sheet for this or other Halliburton<br/>products, contact Chemical Compliance at 1-580-251-4335.

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

#### ***END OF MSDS***



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X Close this window			MSDS

Common Name: RECIP LUBRICANT SYNTHETIC OIL Manufacturer: SPEEDAIRE MSDS Revision Date: 10/1/2001

Grainger Item Number(s): 1WG49

#### Manufacturer Model Number(s): P14114A

MSDS Table of Contents Click the desired link below to jump directly to that section in the MSDS.

SECTION I PRODUCT IDENTIFICATION. SECTION II TYPICAL CHEMICAL AND PHYSICAL PROPERTIES. SECTION III COMPONENTS AND HAZARD STATEMENT. SECTION IV HEALTH HAZARD DATA. SECTION V FIRE FIGHTING MEASURES. SECTION VI REACTIVITY DATA. SECTION VII SPILL OR LEAK PROCEDURE. SECTION VII PERSONAL PROTECTION INFORMATION SECTION VII SPECIAL PRECAUTIONS. SECTION X WASTE DISPOSAL METHODS.

SPEEDAIRE (R*)

MATERIAL SAFETY DATA SHEET

FORM BN-82, 1ST EDITION

DATE: OCTOBER 2001

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THESE RATINGS SHOULD BE USED ONLY AS A PART OF A FULLY IMPLEMENTED H.M.I.S. PROGRAM.

#### SECTION I PRODUCT IDENTIFICATION

TRADE NAME AND SYNONYMS:SPEEDAIRE RECIP LUBRICANT<br/>SYNTHETIC OILPART NUMBERS:1WG49MANUFACTURER'S NAME:<br/>ADDRESS:SPEEDAIRE<br/>1301 NORTH EUCLID AVENUE<br/>PRINCTON, IL 61356HEALTH EMERGENCY PHONE NUMBER:(217) 222-5400<br/>SAFETY DEPARTMENT

CHEMICAL FAMILY:

DIESTER

http://complyplus.grainger.com/grainger/msds.asp?sheetid=2811417

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CHEMICAL NAMES:	ESTER
FORMULA:	PROPRIETARY
CAS #:	PROPRIETARY

#### SECTION II TYPICAL CHEMICAL AND PHYSICAL PROPERTIES

APPEARANCE:CLEAR LIQUID, YELLOW TO LIGHT<br/>BROWN TINTVOLATILES, PERCENT BY VOLUME:0 %BOILING POINT:400 DEG. FSOLUBILITY IN WATER:NEGLIGIBLEVAPOR PRESSURE:<0.01 MMHG @ 20 DEG. C</td>ODOR:MILD, DISTINCTSPECIFIC GRAVITY:(WATER=1) 0.94-0.97

EVAPORATION RATE (BUTYL ACETATE=1): NIL

#### SECTION III COMPONENTS AND HAZARD STATEMENT

THIS PRODUCT IS NON-HAZARDOUS. THE PRODUCT CONTAINS NO KNOWN CARCINOGENS. NO SPECIAL WARNING LABELS ARE REQUIRED UNDER OSHA 29 CFR 1910.1200.

#### SECTION IV HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: NOT ESTABLISHED.

SITUATIONS TO AVOID: AVOID BREATHING OIL MISTS.

INHALATION: PRODUCT IS NOT TOXIC BY INHALATION. IF OIL MIST IS INHALED, REMOVE TO FRESH AIR AND CONSULT PHYSICIAN.

INGESTION: CONSULT PHYSICIAN AT ONCE, MAY CAUSE NAUSEA AND DIARRHEA.

TO THE BEST OF OUR KNOWLEDGE, THE TOXICITY OF THIS PRODUCT HAS NOT BEEN FULLY INVESTIGATED. ANALOGOUS COMPOUNDS ARE CONSIDERED TO BE ESSENTIALLY NON-TOXIC.

#### SECTION V FIRE FIGHTING MEASURES

FLASH POINT (BY CLEVELAND OPEN CUP): 480-540 DEG. F

FLAMMABLE LIMITS: NOT ESTABLISHED

AUTOIGNITION TEMPERATURE: NO DATA

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NFPA RATINGS: NOT ESTABLISHED

EXTINGUISHING MEDIA: DRY CHEMICAL; CO2 FOAM.

SPECIAL FIRE FIGHTING PROCEDURES: BURNING FLUID MAY EVOLVE IRRITATING/NOXIOUS FUMES, FIREFIGHTERS SHOULD USE NIOSH/MNSA-APPROVED SELF-CONTAINED BREATHING APPARATUS. USE WATER CAREFULLY TO COOL FIRE-EXPOSED CONTAINERS. SPRAYING WATER DIRECTLY ON HOT OR BURNING LIQUID MAY CAUSE FROTHING OR SPLASHING.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE

#### SECTION VI REACTIVITY DATA

STABILITY: STABLE

CONDITIONS AND MATERIALS TO AVOID: EXCESSIVE HEAT.

INCOMPATIBLE MATERIALS: STRONG OXIDIZERS, CAUSTIC OR ACIDIC SOLUTIONS.

HAZARDOUS DECOMPOSITION PRODUCTS: ANALOGOUS COMPOUNDS EVOLVE CARBON MONOXIDE, CARBON DIOXIDE, AND OTHER UNIDENTIFIED FRAGMENTS WHEN BURNED. SEE SECTION V.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

#### SECTION VII SPILL OR LEAK PROCEDURE

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: WEAR SUITABLE PROTECTIVE EQUIPMENT, ESPECIALLY GOGGLES. STOP SOURCE OF SPILL. DIKE SPILL AREA. USE ABSORBENT MATERIALS TO SOAK UP FLUID (I.E. SAND, SAWDUST, AND COMMERCIALLY AVAILABLE MATERIALS). WASH SPILL AREA WITH LARGE AMOUNTS OF WATER. PROPERLY DISPOSE OF ALL MATERIALS.

#### SECTION VIII PERSONAL PROTECTION INFORMATION

EYE PROTECTION: CHEMICAL GOGGLES.

PROTECTIVE GLOVES: NOT REQUIRED, BUT RECOMMENDED, ESPECIALLY FOR PROLONGED EXPOSURE.

RESPIRATORY PROTECTION: USE IN WELL VENTILATED AREA.

VENTILATION: LOCAL EXHAUST.

#### SECTION IX SPECIAL PRECAUTIONS

HANDLING: DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES, AND CLOTHING. UPON Atop

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CONTACT WITH SKIN, WASH WITH SOAP AND WATER. FLUSH EYES WITH WATER FOR 15 MINUTES AND CONSULT PHYSICIAN. WASH CONTAMINATED CLOTHING BEFORE REUSE.

STORAGE: KEEP CONTAINER TIGHTLY SEALED WHEN NOT IN USE.

#### SECTION X WASTE DISPOSAL METHODS

INCINERATE THIS PRODUCT AND ALL ASSOCIATED WASTES IN A LICENSED FACILITY IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET SHOULD BE PROVIDED TO ALL WHO USE, HANDLE, STORE, TRANSPORT, OR ARE OTHERWISE EXPOSED TO THIS PRODUCT. SPEEDAIRE BELIEVES THE INFORMATION IN THIS DOCUMENT TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO GUARANTEE THAT IT IS.

NOTE:

NOT A CONTROLLED PRODUCT UNDER CANADIAN WHMIS HAZARD CRITERIA; AS SPECIFIED IN CONTROLLED PRODUCT REGULATION.

PREPARED BY THE PRODUCT SPECIALIST, AFTERMARKET OCTOBER 2001

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				IDENTIFICATION	
					CODES
RODUCT N	IAME			Health	1
Rector	Seal Silicone	Sealant			ility 1
					ity 1
RODUCT C	ODES			PPI	= B
	57506				
HEMICAL					
	c/Inorganic				
SE					
Silico	one Sealant and	Adhesive			
ANUFACTU	IRER'S NAME			EMERGENCY TELEPHON	E NO.
The Re	ctorSeal Corpo	ration		Chemtrec 24 Hours	
2601 S	penwick Drive			(800) 424-9300	
Housto	n, Texas 7705	5 USA			
ATE OF V	ALIDATION		TE	CHNICAL SERVICE TE	LEPHONE NO.
July 2	0, 2007			(800) 231-3345	
	PREPARATION				
July 2	0, 2007				
========					===============
		COMPOSITION/1		ON ON INGREDIENTS	
by WT	CAS No.	INGREDIENT		UNITS	
1-5	4253-34-3	Methyltriacet	oxysilan	e	
		ACGIH TI	V 1	0 ppm	
		OSHA PE	ь 1	0 ppm	
1-5	17689-77-9	Ethyltriaceto	xysilane		
		ACGIH TL	V 1	0 ppm	
		OSHA PE	ь 1	0 ppm	
10-30	7631-86-9				
		ACGIH TL	V 1	0 mg/m3	
		OSHA PE	L	6 mg/m3	
.1-1 556	-67-2 Octamet	hylcyclotetras			
		ACGIH TL	-		
		OSHA PE	L N/	D	
exposure formed du SHA PEL:	to water, mois ring curing on TWA 10 ppm.	ture, or humid exposure to w ACGIH TLV: TW	air. C ater or A 10 ppm		acetic acid,
		HAZARDS IDENT			
SUMMARY C Vapor Cye conta rritatic	PF ACUTE HAZARD vevolved durin act may cause i on.	oS Ig product curi	ng may b ion and	e irritating to no injury. May cause	se and throat

MSDS 0594

SKIN CONTACT May cause skin irritation. INGESTION May cause gastrointestinal distress. SUMMARY OF CHRONIC HAZARDS Repeated contact may cause dermatitis, eye irritation, or bronchitis. MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver, or kidneys may have increased susceptibility to excessive exposure. Section 4 -- FIRST AID MEASURES _____ If INHALED: If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential. If on SKIN: Wash with soap and water. Remove contaminated clothing. If irritation occurs, seek medical attention. If in EYES: Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention. If SWALLOWED: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. _____ Section 5 -- FIRE FIGHTING MEASURES _____ FLASH POINT LEL UEL N/D None N/D EXTINGUSING MEDIA Foam, dry chemical, carbon dioxide or water fog. SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10). UNUSUAL FIRE AND EXPLOSION HAZARDS: None _____ Section 6 -- ACCIDENTAL RELEASE MEASURES _____ _____ STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Scrape up spills To prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up. Section 7 -- HANDLING AND STORAGE _____ PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in cool place. Keep container closed and upright when not in use. OTHER PRECAUTIONS: Provide adequate ventilation during use to keep ambient air acetic vapor concentration below TLV or use respirator protection. COMMENT: When heated to temperatures above 302F(150C) in the presence of air, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard; a known skin and respiratory sensitizer; and an irritant to the eyes, nose, throat, skin, and digestive system. Safe handling conditions may be maintained by keeping vapor concentrations within the OSHA Permissible exposure limit for formaldehyde. Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers.

KEEP OUT OF REACH OF CHILDREN. ______ Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION _____ RESPIRATORY PROTECTION (SPECIFY TYPE): In confined, poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air respirators until vapors from cured product have dissipated. VENTILATION - LOCAL EXHAUST: Maintain air flow during application. SPECIAL: N/A MECHANICAL (GENERAL): Acceptable. OTHER: N/A PROTECTIVE GLOVES: Coveralls recommended. EYE PROTECTION: Safety glasses (ANSI Z-87.1 or equivalent) OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended. WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse. Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES _____ 212 F (100 C) @ 760mm Hg BOILING POINT: SPECIFIC GRAVITY (H20 = 1): 1.03 VAPOR PRESSURE (mm Hg): < 5mm Hg MELTING POINT: N/A VAPOR DENSITY (AIR = 1): N/A EVAPORATION RATE (ETHYL ACETATE = 1): N/A Paste / Acetic Acid Vinegar Odor APPEARANCE / ODOR: SOLUBILITY IN WATER: Insoluble Section 10 -- STABILITY AND REACTIVITY _____ STABILITY: Stable CONDITIONS TO AVOID: Exposure to air or moisture until ready to use. INCOMPATIBILITY (MATERIALS TO AVOID): Oxidizing material can cause a reaction. Air or moisture causes curing and acetic acid vapor forms. HAZARDOUS DECOMPOSITION PRODUCTS: Silicone dioxide, carbon dioxide, and traces on incompletely burned carbon products, including formaldehyde. HAZARDOUS POLYMERIZATION: Will not occur. Section 11 -- TOXICOLOGY INFORMATION _____ CHRONIC HEALTH HAZARDS No ingredient in this product is an IARC, NTP or OSHA listed carcinogen. _____ TOXICOLOGY DATA Ingredient Name _____ Methyltriacetoxysilane Oral-Rat LD50:2060 mg/kg Inhalation-Rat LC50:N/D Ethyltriacetoxysilane Oral-Rat LD50:N/D Inhalation-Rat LC50:N/D Silica Oral-Rat LD50:N/D Inhalation-Rat LC50:N/D

		otetrasiloxane Oral-Rat LD50:N/D Inhalation-Rat LC	50:N/D	
		n 12 Ecological	Information	
ECOLOGICAL Ingredient	Name			
Methyltri				
			TRATION POTENTIAL	N/D
		WATERFOWL TOXICIT BOD	Ŷ	N/D N/D
		AQUATIC TOXICITY		N/D N/D
Ethyltria	cetoxy			10, 2
-	-		TRATION POTENTIAL	N/D
		WATERFOWL TOXICIT	Ϋ́Υ	N/D
		BOD		N/D
Silica		AQUATIC TOXICITY		N/D
SIIIca		FOOD CHAIN CONCEN	TRATION POTENTIAL	N/D
		WATERFOWL TOXICIT		N/D
		BOD	-	N/D
		AQUATIC TOXICITY		N/D
Octamethy	rlcyclo	tetrasiloxane		
			TRATION POTENTIAL	N/D N/D
		WATERFOWL TOXICIT BOD	Ĭ	N/D N/D
		AOUATIC TOXICITY		N/D N/D
		n 13 DISPOSAL C		
Disposal Me Waste from Resource accordance	thod: this p Conser e with	vation and Recover Federal, State, a	dfill idered hazardous as y Act (RCRA) 40 CFR nd Local regulation	261. Dispose of in regarding pollution.
	Sectio	n 14 TRANSPORTA		
DOT: OCEAN (IMDG AIR (IATA):	;):	Non-Regulated Non-Regulated Non-Regulated		
	Sectio	n 15 REGULATORY	INFORMATION	
REGULATORY Ingredient	DATA			
Mothultri	agotor			
Methyltri	acelux	SARA 313	No	
			Yes	
		CERCLA RQ	N/A	
_		RCRA Code	N/A	
Ethyltria	cetoxy			
		SARA 313	Yes	
		TSCA Inventory	Yes	

CERCLA RQ RCRA Code	1000 lbs. N/A
Silica	
SARA 313	Yes
TSCA Inventory	Yes
CERCLA RQ	100 lbs.
RCRA Code	N/A
Octamethylcyclotetrasiloxane	
SARA 313	Yes
TSCA Inventory	Yes
CERCLA RQ	100 lbs.
RCRA Code	N/A

WHMIS (CANADA): D2A, D2B

Volatile Organic Content: 32 grams per liter (0.27 lb/gallon), 3.17% by weight

meets California Air Resources Board VOC standard for sealants and caulking compounds 12/31/2002).

Section 16 -- OTHER INFORMATION

_____

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further information: (713) 263-8001



A Schlumberger Company

#### MATERIAL SAFETY DATA SHEET

<b>MSDS No.</b> 12003 <b>T</b>	rade Name:	RINGFREE*		Revision Date: 12/17/2010		
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION						
Trade Name:	RINGFREI	E*				
Chemical Family: Product Use:	Mixture Drilling flui	d additive.				
Supplied by:	M-I L.L.C. P.O. Box 4 Houston, T www.misw					
Telephone Number:	281-561-1					
Emergency Telephone (24 hr.	,					
Prepared by:	Product Sa	afety Group				
Revision No.	6					
HMIS Rating Health: 1 Flam	nmability: 1	Physical Haza	rd: 0 PPE:	J		

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

## 2. HAZARDS IDENTIFICATION

Emergency Overview:	Occupational exposure not expected to present a health or physical hazard. Prolonged exposure, however, may cause eye, skin and respiratory irritation.			
Canadian Classification: UN PIN No: Not regulated.		WHMIS Class:	Not a contro	lled product.
Physical State: Liquid	Color:	Light yellow	Odor:	Mild
Potential Health Effects: Acute Effects Eye Contact: Skin Contact: Inhalation: Ingestion:	Not expected t Not expected t however, may	o irritate eyes. Prolonged o o irritate skin. Prolonged c o be an inhalation hazard. cause irritation. stric distress, nausea and v	ontact, howeve Prolonged inh	er, may cause irritation. alation of vapors or mists,
Carcinogenicity & Chronic Effects: Routes of Exposure: Target Organs/Medical Conditions Aggravated by Overexposure:	Eyes. Dermal (	1 - Toxicological Informatio (skin) contact. Inhalation. I from occupational exposi		

Trade Name: RINGFREE*

MSDS No. 12003

## **Revision Date:** 12/17/2010

#### Page 2/6

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Water	7732-18-5	30 - 60	No comments.
Acrylic polymer		60 - 100	No comments.

### 4. FIRST AID MEASURES

Eye Contact:	Promptly wash eyes with lots of water while lifting eye lids. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
General notes:	Persons seeking medical attention should carry a copy of this MSDS with them.

## 5. FIRE FIGHTING MEASURES

#### **Flammable Properties**

 Flash Point: F (C):
 Not flammable

 Flammable Limits in Air - Lower (%): ND

 Flammable Limits in Air - Upper (%): ND

 Autoignition Temperature: F (C): ND

 Flammability Class:
 NA

 Other Flammable Properties:
 ND

 Extinguishing Media:
 Carbon dioxide. Dry chemical. Foam. Water mist.

#### **Protection Of Fire-Fighters:**

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

#### Hazardous Combustion Products: Oxides of: Carbon.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protective equipment identified in Section 8.

**Spill Procedures:** Contain spilled material. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Shut off leak if it can be done safely. If released into the environment, take all reasonable measures to repair, remedy and confine the effects of the substance. Remediate, manage, remove or otherwise dispose of the substance in accordance with applicable laws and regulations. Absorb in vermiculite, dry sand or earth. Place into containers for disposal.

Trade Name: RINGFREE* Revision Date: 12/17/2010

MSDS No. 12003

**Environmental Precautions:** 

Waste must be disposed of in accordance with federal, state and local laws. In the U.S., for products with reportable quanitity (RQ) components - if the RQ is exceeded, report to National Spill Response Office at 1 800 424 8802.

## 7. HANDLING AND STORAGE

Handling:Put on appropriate personal protective equipment. Avoid contact with skin and eyes.<br/>Avoid breathing vapors or spray mists. Use only in a well ventilated area. Wash<br/>thoroughly after handling.

**Storage:** Store in dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Water	7732-18-5	30 - 60	NA	NA	NA	None
Acrylic polymer		60 - 100	NA	NA	NA	None

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

#### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

**Eye/Face Protection:** Wear chemical safety goggles.

Skin Protection:Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear<br/>chemical resistant gloves such as nitrile or neoprene.Respiratory Protection:All respiratory protection equipment should be used within a comprehensive<br/>respiratory protection program that meets the requirements of 29 CFR 1910.134<br/>(U.S. OSHA Respiratory Protection Standard) or local equivalent.If exposed to airborne mist/aerosol of this product, use at least a NIOSH-approved<br/>N95 half-mask disposable or re-usable particulate respirator. In work environments<br/>containing oil mist/aerosol, use at least a NIOSH-approved P95 half-mask disposable<br/>or reuseable particulate respirator.If exposed to vapors from this product use a NIOSH/MSHA-approved respirator with<br/>an Organic Vapor cartridge.

**General Hygiene Considerations:** Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

Trade Name: RINGFREE*

MSDS No. 12003

## **Revision Date:** 12/17/2010

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Light yellow
Odor:	Mild
Physical State:	Liquid
pH:	6 - 8 (neat)
Specific Gravity (H2O = 1):	1.27
Solubility (Water):	Soluble
Flash Point: F (C):	Not flammable
Melting/Freezing Point:	ND
Boiling Point:	194 - 212F (90 - 100C)
Viscosity:	100 - 500 cPs
Vapor Pressure:	ND
Vapor Density (Air=1):	ND
Vapor Density (Air=1):	ND
Evaporation Rate:	ND
Odor Threshold(s):	ND

## **10. STABILITY AND REACTIVITY**

Chemical Stability:
Conditions to Avoid:
Materials to Avoid:
Hazardous Decomposition
Products:
Hazardous Polymerization

Stable Keep away from heat, sparks and flame. Contact with oxidizing agents. For thermal decomposition products, see Section 5.

#### Will not occur

## **11. TOXICOLOGICAL INFORMATION**

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	CAS No.	Acute Data
Acrylic polymer		Oral LD50: >40 gm/kg (rat)

#### Product Toxicological Information:

No toxicological data is available for this product.

## 12. ECOLOGICAL INFORMATION

Component Ecotoxicity Data:	Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.
Product Ecotoxicity Data: Biodegration: Bioaccumulation: Octanol/Water Partition Coefficient:	Contact M-I Environmental Affairs Department for available product ecotoxicity data. ND ND ND

## **13. DISPOSAL CONSIDERATIONS**

<b>MSDS No.</b> 12003	Revision Date: 12/17/2010	Page 5/6			
Waste Classification:	This product does not meet the criteria of a hazardous waste if discarded purchased form.	d in its			
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time disposal, whether the product meets RCRA criteria for the hazardous waste. This because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.				
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become dispose of in a permitted industrial landfill. Ensure that the containers ar the RCRA criteria prior to disposal in a permitted industrial landfill.				

**MATERIAL SAFETY DATA SHEET** Trade Name: RINGFREE*

#### 14. **TRANSPORT INFORMATION**

U.S. DOT **Shipping Description:** 

Canada TDG Shipping Description: UN PIN No: **IMDG Shipping Description: ICAO/IATA Shipping Description:** 

Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA. Not regulated. Not regulated. Not regulated. Not regulated.

#### **REGULATORY INFORMATION** 15.

**U.S. Federal and State Regulations** 

SARA 311/312 Hazard Catagories: Not a SARA 311/312 hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

#### International Chemical Inventories

Australia AICS - Components are listed or exempt from listing. Canada DSL - Components are listed or exempt from listing. China Inventory - Components are listed or exempt from listing. European Union EINECS/ELINCS - Components are listed or exempt from listing. Japan METI ENCS - Components are listed or exempt from listing. Korea TCCL ECL - Components are listed or exempt from listing. New Zealand - Components are listed or exempt from listing. Philippine PICCS - Components are listed or exempt from listing. U.S. TSCA - Components are listed or exempt from listing. U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

#### **Canadian Classification:**

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class:

Not a controlled product.

Trade Name: RINGFREE*

MSDS No. 12003

Revision Date: 12/17/2010

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## **16. OTHER INFORMATION**

The following sections have been revised: 1, 6, 16.

#### NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

#### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



# MSDS No. 12181 Trade Name: ROD COAT* B 700 Revision Date: 06/02/2011 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name:	ROD COAT	* B 700			
Chemical Family: Product Use:	Mixture Lubricant.				
Supplied by: Telephone Number: Emergency Telephone (2 Prepared by:	Houston, TX www.miswa 281-561-150 24 hr.): 281-561-160	M-I L.L.C. P.O. Box 42842 Houston, TX 77242 www.miswaco.slb.com 281-561-1509 281-561-1600 Product Safety Group			
Revision No.	4				
HMIS Rating Health: 1	Flammability: 1	Physical Hazard: 0	PPE:	Е	

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

## 2. HAZARDS IDENTIFICATION

Emergency Overview: Canadian Classification: UN PIN No: Not regulated.		Caution! May cause eye, skin and respiratory tract irritation.					
				WHMIS Class:	D2B		
Physical State:	Semi-solid	Color:	Tan		Odor:	Petroleum.	
Potential Health Acute Effects	Effects:						
Eye Conta	ct:	May irritate ey	es.				
Skin Contact:		May be irritating to the skin. Prolonged or repeated contact may cause defatting of					
				titis (inflammation).			
Inhalation:		Vapors or mists may be irritating to the respiratory tract. Overexposure to vapors and mists which may be released at high temperatures may cause central nervous system (CNS) effects and respiratory tract irritation.					
Ingestion:		May cause gastric distress, nausea and vomiting if ingested.					
Carcinogenicity Effects:	& Chronic	See Section 1	1 - Toxi	cological Informatic	n.		
Routes of Exposure:		Eyes. Dermal (skin) contact. Inhalation.					
Target Organs/Medical		Eyes. Skin. Respiratory System. Central Nervous System (CNS).					
Conditions Aggravated by Overexposure:							

Trade Name: ROD COAT* B 700 Revision Date: 06/02/2011

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Mineral oil, petroleum	64742-52-5	60 - 100	No comments.
distillates, hydrotreated			
(severe) heavy naphthenic			
Barium, acetate tallow fatty		30 - 60	No comments.
acids complexes			

**Composition Comments:** 

Component LD50 and LC50 values are provided in Section 11, if available.

## 4. FIRST AID MEASURES

Eye Contact:	Promptly wash eyes with lots of water while lifting eye lids. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
General notes:	Persons seeking medical attention should carry a copy of this MSDS with them.

## 5. FIRE FIGHTING MEASURES

#### **Flammable Properties**

Flash Point: F (C):	350F (177C)
Flash Point Method:	COC
Flammable Limits in Air - Lower (%):	ND
Flammable Limits in Air - Upper (%):	ND
Autoignition Temperature: F (C):	390F (199C)
Explosion Data - Sensitivity to Mechanical Impact:	NA
Explosion Data - Sensitivity to Static Discharge:	If applicable, information is provided in Section 5 Special Fire-Fighting Procedures, Other Flammable Properties and Section 6 Spill Procedures.
Flammability Class:	IIIB
Extinguishing Media:	Water fog, carbon dioxide, foam, dry chemical. Water sprayed directly on burning product may cause frothing.

#### **Protection Of Fire-Fighters:**

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Oxides of: Carbon. Barium.

Trade Name: ROD COAT* B 700

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Revision Date: 06/02/2011

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**Conditions of Flammability:** Products are classified as flammable/combustible based on flash point as defined in the Health Canada Controlled Products Regulations, U.S. Occupational Health and Safety Administration Hazard Communication Standard and transportation regulations. See Sections 1, 2, 5, 14 and 15 for flammable/combustible classification information. Flammable/combustible materials may ignite and burn if exposed to a flame or other sources of ignition.

#### Other Flammable Properties: ND

## 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:Use personal protective equipment identified in Section 8.Spill Procedures:Evacuate the spill area with the exception of the spill response team. Keep<br/>personnel removed and upwind of spill. Extinguish all ignition sources. Avoid<br/>sparks, flames, heat and smoking. Shut off leak if it can be done safely. Contain<br/>spilled material. Do not allow spilled material to enter sewers, storm drains or<br/>surface waters. Absorb in vermiculite, dry sand or earth. Place into containers for<br/>disposal.Environmental Precautions:Waste must be disposed of in accordance with federal, state and local laws.

## 7. HANDLING AND STORAGE

Handling:Put on appropriate personal protective equipment. Avoid contact with skin and eyes.<br/>Avoid breathing vapors or spray mists. Use only in a well ventilated area. Wash<br/>thoroughly after handling.Storage:Store in dry, well-ventilated area. Keep container closed. Keep away from heat,<br/>sparks and flames. Store away from incompatibles. Follow safe warehousing<br/>practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Mineral oil, petroleum	64742-52-5	60 - 100	NA	NA	NA	(3) Oil mist.
distillates, hydrotreated						
(severe) heavy naphthenic						
Barium, acetate tallow fatty		30 - 60	NA	NA	NA	None
acids complexes						

#### Notes

(3) For Oil mist, mineral: ACGIH TLV 5 mg/m³, STEL 10 mg/m³; OSHA PEL 5 mg/m³

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

#### Personal Protection Equipment

Trade Name: ROD COAT* B 700

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All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

Eye/Face Protection:	Wear chemical safety goggles.				
Skin Protection:	Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as nitrile or neoprene.				
Respiratory Protection:	All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent. If exposed to airborne mist/aerosol of this product, use an organic vapor cartridge with a P-95 pre-filter attached. In work environments containing oil mist/aerosol, use				
	an organic vapor cartridge with a P-95 pre-filter attached. If exposed to vapors from this product, use a NIOSH/MSHA-approved respirator with an organic vapor cartridge.				

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Color: Odor: Physical State: pH: Specific Gravity (H2O = 1): Solubility (Water): Flash Point: F (C): Melting/Freezing Point: Boiling Point: Pour Point: Viscosity: Vapor Pressure: Vapor Density (Air=1): Evaporation Rate:	Tan Petroleum. Semi-solid 6.5 - 7.5 (1% solution) 0.9 at 20F (16C) Negligible 350F (177C) 400F (204.4C) ND -20F (-28.8C) 700 - 900 SUS at 100F (38C) ND ND ND
•	
• • • •	ND
<b>Octanol/Water Partition</b>	ND
Coefficient:	
Odor Threshold(s):	ND

## **10. STABILITY AND REACTIVITY**

Chemical Stability:	Stable
Conditions to Avoid:	Keep away from heat, sparks and flame.
Materials to Avoid:	Oxidizers.
Conditions of Reactivity:	See Conditions and Materials to Avoid, if applicable.
Hazardous Decomposition	For thermal decomposition products, see Section 5.
Products:	
Hazardous Polymerization	Will not occur

Trade Name: ROD COAT* B 700

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## 11. TOXICOLOGICAL INFORMATION

#### Acute Exposure Effects, Irritation and Sensitization: See Section 2.

Chronic, Carcinogenicity, Reproductive Toxicity, Teratogenicity, Embryotoxicity, Mutagenicity Effects: See Component Toxicological Summary and Product Toxicological Information, if available. Synergistic Products/Effects: ND

**Component Toxicological Data:** Any adverse component toxicological effects and acute toxicity values (LD50s, LC50s) are listed below. If no effects or acute values are listed for components, no such data were identified.

Ingredient	CAS No.	Acute Data
Mineral oil, petroleum	64742-52-5	Oral LD50: >5 g/kg (rat); Dermal LD50: >5 g/kg (rabbit)
distillates, hydrotreated		
(severe) heavy naphthenic		

Product Toxicological Information: No toxicological data is available for this product.

## 12. ECOLOGICAL INFORMATION

**Component Ecotoxicity Data:** Component ecotoxicity data are listed below. If no data are listed, none were found in the component review. Contact M-I Environmental Affairs Department for available product ecotoxicity data. **Product Ecotoxicity Data: Biodegration:** ND **Bioaccumulation:** ND 13. **DISPOSAL CONSIDERATIONS** ND Waste Classification: Waste Management: Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed. **Disposal Method:** Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

U.S. DOT Shipping Description:

Canada TDG Shipping Description: UN PIN No: IMDG Shipping Description: ICAO/IATA Shipping Description: Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA. Not regulated. Not regulated. Not regulated. Not regulated.

Trade Name: ROD COAT* B 700

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Revision Date: 06/02/2011

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## **15. REGULATORY INFORMATION**

#### **U.S. Federal and State Regulations**

SARA 311/312 Hazard Catagories: Immediate (acute) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro. F	CA 65 Repro. M
Barium, acetate tallow fatty acids complexes		1%, Ba					

#### **International Chemical Inventories**

Australia AICS - Components are listed or exempt from listing.

Canada DSL - Components are listed or exempt from listing.

China Inventory - Components are listed or exempt from listing.

European Union EINECS/ELINCS - Components are listed or exempt from listing.

Japan METI ENCS - Contains a component that is not listed.

Korea TCCL ECL - Components are listed or exempt from listing.

New Zealand - Contains a component that is not listed.

Philippine PICCS - Contains a component that is not listed.

U.S. TSCA - Components are listed or exempt from listing.

U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

#### **Canadian Classification:**

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: D2B

## **16. OTHER INFORMATION**

The following sections have been revised: 1, 3, 5, 8, 9, 11, 12, 15, 16.

#### NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

#### Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



MSDS NO.	12011 <b>T</b>	rade Name: ROD EASE		Revision Date: 12/11/2007				
	1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION							
Trade Name: Chemical Far Product Use: Emergency T	•	ROD EASE Mixture Drilling Fluid Additive. L ): 281-561-1600	ubricant.					
Supplied by:		M-I L.L.C. P.O. Box 42842 Houston, TX 77242 www.miswaco.com						
Telephone Nu Prepared by:	umber:	281-561-1512 Product Safety Group						
Revision Nun	nber:	5						
HMIS Rating Health: 1		Flammability: 1	Physical Hazard: 0	PPE: J				
		ous, 2=Moderate, 1=Slight, 0= e Equipment recommendatio	Minimal Hazard. *Chronic effens.	cts - See Section 11. See				

# 2. HAZARDS IDENTIFICATION

Emergency Overview:	Occupational exposure not expected to present a health or physical hazard. Prolonged exposure, however, may cause eye, skin and respiratory irritation.				
Canadian Classification: UN PIN No: Not regulated.	WHMIS Class:		Not a controlled product.		
Physical Thick Liquid State:	Odor	Distinctive	Color:	Dark brown.	
Potential Health Effects:					
Acute Effects					
Eye Contact: Skin Contact: Inhalation:	Not expected to irritate eyes. Prolonged contact, however, may cause irritation. Not expected to irritate skin. Prolonged contact, however, may cause irritation. Not expected to be an inhalation hazard. Prolonged inhalation of vapors or mists, however, may cause irritation.				
Ingestion:	May cause gastric distress, nausea and vomiting if ingested.				
Carcinogenicity & Chronic Effects: Routes of Exposure: Target Organs/Medical Conditions Aggravated by Overexposure:	See Section 11 for additional information. Eyes. Dermal (skin) contact. Inhalation. None expected from occupational exposure.				

Trade Name: ROD EASE

MSDS NO. 12011

**Revision Date:** 12/11/2007

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:	
Vegetable oil		80 - 90%	No comments.	
Additives		10 - 20%	No comments.	
	4. FIR	ST AID MEASURES	8	
Eye Contact:	Promptly wash		lifting eye lids. Continue to rinse for at	
Skin Contact:		Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.		
Inhalation:		o fresh air. If not breathing, g xygen. Get medical attention	ive artificial respiration. If breathing is	
Ingestion:		3 glasses of water or milk, if oous person. Get medical atte	conscious. Never give anything by mouth ention.	
General notes:	Persons seeking medical attention should carry a copy of this MSDS with them.			
	5. FIRE	FIGHTING MEASUR	ES	
Flammable Properties	<u>5</u>			

Flash Point: F (C):734F (390C)Flash Point Method:COC

 Flammable Limits in Air - Lower (%): ND

 Flammable Limits in Air - Upper (%): ND

 Autoignition Temperature: F (C): ND

 Flammability Class:

 IIIB

 Other Flammable Properties:

 ND

 Extinguishing Media:

 Carbon dioxide. Dry chemical. Foam. Water mist.

**Protection Of Fire-Fighters:** 

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Oxides of Carbon. Sulfur.

6.	ACCIDENTAL RELEASE MEASURES
Personal Precautions:	Use personal protective equipment identified in Section 8.
Spill Procedures:	Evacuate surrounding area, if necessary. Keep personnel removed and upwind of spill. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Shut off leak if it can be done safely. Contain spilled material. Absorb in vermiculite, dry sand or earth. Place into containers for disposal.
Environmental Precautions:	Do not allow to enter sewer or surface and subsurface waters. Waste must be disposed of in accordance with federal, state and local laws. In the U.S., for products with reportable quanitity (RQ) components - if the RQ is exceeded, report to National Spill Response Office at 1 800 424 8802.

Trade Name: ROD EASE

MSDS NO. 12011

#### Revision Date: 12/11/2007

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### T. HANDLING AND STORAGE Handling: Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid breathing vapors or spray mists. Use only in a well ventilated area. Wash

thoroughly after handling.

Storage:

Store in dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Vegetable oil		80 - 90%	NA	NA	NA	(1)
Additives		10 - 20%	NA	NA	NA	None

#### Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable).

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

#### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

Eye/Face Protection:	Wear chemical safety goggles.		
Skin Protection:	Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as nitrile or neoprene.		
Respiratory Protection:	All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent. If exposed to airborne mist/aerosol of this product, use at least a NIOSH-approved N95 half-mask disposable or re-usable particulate respirator. In work environments containing oil mist/aerosol, use at least a NIOSH-approved P95 half-mask disposable or re-usable particulate respirator.		

**General Hygiene Considerations:** Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9.	PHYSICAL AND CHEMICAL PROPERTIES
Color:	Dark brown.
Odor	Distinctive
Physical State:	Thick Liquid
pH:	7 - 7.5
Specific Gravity (H2O = 1):	0.887
Solubility (Water):	ND
Flash Point: F (C):	734F (390C)
Melting/Freezing Point:	-13F (-25C)
Boiling Point:	>572F (>300C)
Vapor Pressure:	ND
Vapor Density (Air=1):	ND

Trade Name: ROD EASE

MSDS NO. 12011

a

**Revision Date:** 12/11/2007

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	J.
Evaporation Rate:	
Odor Threshold(s):	

# PHYSICAL AND CHEMICAL PROPERTIES

ND

#### **10. STABILITY AND REACTIVITY**

Chemical Stability: Conditions to Avoid: Materials to Avoid: Hazardous Decomposition Products: Hazardous Polymerization:

Stable Keep away from heat, sparks and flame. Oxidizers. For thermal decomposition products, see Section 5.

Will not occur

#### **11. TOXICOLOGICAL INFORMATION**

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

#### **Product Toxicological Information:**

Oral LD50: >5000 mg/kg (rat).

#### 12. ECOLOGICAL INFORMATION

Product Ecotoxicity Data:	Contact M-I Environmental Affairs Department for available product ecotoxicity data.
Biodegration: Bioaccumulation: Octanol/Water Partition Coefficient:	ND ND ND
	13. DISPOSAL CONSIDERATIONS
Waste Classification:	This product does not meet the criteria of a hazardous waste if discarded in its purchased form.

Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste,

# isposal Method:Recover and reclaim or recycle, if practical. Should this product become a waste,<br/>dispose of in a permitted industrial landfill. Ensure that the containers are empty by<br/>the RCRA criteria prior to disposal in a permitted industrial landfill.

#### **14. TRANSPORT INFORMATION**

U.S. DOT Shipping Description:	Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.
Canada TDG Shipping Description: UN PIN No:	Not regulated. Not regulated.
IMDG Shipping Description:	Not regulated.

Trade Name: ROD EASE

MSDS NO. 12011 ICAO/IATA Shipping Description: Revision Date: 12/11/2007 Not regulated. Page 5/5

#### **15. REGULATORY INFORMATION**

U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Immediate (acute) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

#### **International Chemical Inventories**

Australia AICS - Components are listed or exempt from listing. Canada DSL - Components are listed or exempt from listing. China Inventory - Components are listed or exempt from listing. European Union EINECS/ELINCS - Components are listed or exempt from listing. Japan METI ENCS - Components are listed or exempt from listing. Korea TCCL ECL - Components are listed or exempt from listing. Philippine PICCS - Components are listed or exempt from listing. U.S. TSCA - Contains a component(s) that is not listed. U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

#### Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: Not a controlled product.

#### **16. OTHER INFORMATION**

The following sections have been revised: 1, 16

#### NA - Not Applicable, ND - Not Determined.

#### Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

Equiva Servic	es - MSDS		Page 1 of 9
	FETY DATA SHEET : 02/13/2007		
SECTION 1	PRODUCT AND COMPANY		
	<b></b>		<b>-</b> -
PRODUCT: R	otella® T Multigrade SAE	15W-40 (CJ-4)	
PRODUCT CODI 5001206205,	: 71630E - 15 E(S): 3194, 50012, 5001506205, 5056838, 50 71355, 5071356, 5073235,	63444, 5063458, 50707	
MANUFACTURE	R ADDRESS: SOPUS Produc	ts, P.O. Box 4427, Ho	uston, TX. 77210-4427
Health Info	UMBERS mation: (877) 242-7400 rmation: (877) 504-9351 ance Number: (877) 276-	7285	
	PRODUCT/INGREDIENTS		
CAS#	CONCENTRATION	INGREDIENTS	Heavy Duty
	90 ~ 98.99 %volum 1 ~ 4.99 %volume 1 ~ 4.99 %vol	Zinc Dialkyldi	ed petroleum oils thiophosphate y additives
	HAZARDS IDENTIFICAT	ION	
EMERGENCY OV Appearance & Health Hazar Physical Haz NFPA Rating Hazard Ratin Extreme - 4 Inhalation: Inhalation c cause mild i	© Odor: Bright and clear rds: No known immediate f zards: No known physical (Health, Fire, Reactivin ng: Least - 0 Sl of vapors (generated at f irritation of the nose, s	ar liquid. Mild odor. health hazards. hazards. ty): 0, 1, 0 ight - 1 Moderate high temperatures onl	- 2 High - 3 y) or oil mist may
Eye Irritati Lubricating the eyes.	ion: oils are generally cons.	idered no more than m	inimally irritating to
	t: light irritation of the s sation and minor redness		

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Lubricating oils are generally no more than slightly toxic if swallowed.

Other Health Effects: The International Agency for Research on Cancer (IARC) has determined there is sufficient evidence for the carcinogenicity in experimental animals of used gasoline motor oils. Handling procedures and safety precautions in the MSDS should be followed to minimize exposure to the used product.

Signs and Symptoms: Irritation as noted above.

Aggravated Medical Conditions: Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product.

For additional health information, refer to section 11.

SECTION 4 FIRST AID MEASURES

Inhalation:

Remove victim to fresh air and provide oxygen if breathing is difficult. Get medical attention. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

Skin:

Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water, then wash with scap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

Eye: Flush with water. If irritation occurs, get medical attention.

Ingestion: Do not induce vomiting. In general, no treatment is necessary unless large quantities of product are ingested. However, get medical attention.

Note to Physician: In general, emesis induction is unnecessary in high viscosity, low volatility products such as oils and greases.

SECTION 5 FIRE FIGHTING MEASURES

Flash Point [Method]: >400 °F/>204.44 °C [ Pensky-Martens Closed Cup]

Extinguishing Media: Material will float and can be re-ignited on surface of water. Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames. Do not use a direct stream of water.

Fire Fighting Instructions: Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus. This material is non-flammable.

Unusual Fire Hazards: Material may ignite when prcheated.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: May burn although not readily ignitable.

Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

Spill Management: FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

Place in container for proper disposal. Remove contaminated soil to remove contaminated trace residues. Dispose of in same manner as material.

Reporting: CERCLA: Product is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) petroleum exclusion. Releases to air, land, or water are not reportable under CERCLA (Superfund).

CWA: This product is an oil as defined under Section 311 of EPA's Clean Water Act (CWA). Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 1-800-424-8802.

SECTION 7 HANDLING AND STORAGE

# Precautionary Measures:

Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet. Launder contaminated clothing before reuse. Properly dispose of contaminated leather articles such as shoes or belts that cannot be decontaminated. Avoid heat, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. Ground all handling equipment to prevent sparking.

Storage:

Do not store in open or unlabeled containers. Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.

Container Warnings:

Keep containers closed when not in use. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers. SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION Oil mist, mineral ACGIH TLV TWA: 5 mg/m3 STEL: 10 mg/m3 Oil mist, mineral OSHA PEL TWA: 5 mg/m3 EXPOSURE CONTROLS Provide adequate ventilation to control airborne concentrations below the exposure quidelines/limits. PERSONAL PROTECTION Personal protective equipment (PPE) selections vary based on potential exposure conditions such as handling practices, concentration and ventilation. Information on the selection of eye, skin and respiratory protection for use with this material is provided below. Eye Protection: Chemical Goggles, or Safety glasses with side shields Skin Protection: Use protective clothing which is chemically resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements. Published literature, test data and/or glove and clothing manufacturers indicate the best protection is provided by: Neoprene, or Nitrile Rubber Respiratory Protection: If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134. Types of respirator(s) to be considered in the selection process include: For Mist: Air Purifying, R or P style NIOSH approved respirator. For Vapors: Air Purifying, R or P style prefilter & organic cartridge, NIOSH approved respirator. Self-contained breathing apparatus for use in environments with unknown concentrations or emergency situations. SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES Appearance & Odor: Bright and clear liquid. Mild odor. Substance Chemical Family: Petroleum Hydrocarbon Appearance: Bright and clear liquid.

Flash Point: > 400 °F [Pensky-Martens Closed Cup] Physical State: Liquid Pour Point: -20 °F 2 £ Solubility (in Water): Insoluble Specific Gravity: 0.88 - 0.89 Stability: Stable Viscosity: 103 cSt @ 40 °C _____ SECTION 10 REACTIVITY AND STABILITY ______ Stability: Material is stable under normal conditions. Conditions to Avoid: Avoid heat and open flames. Materials to Avoid: Avoid contact with strong oxidizing agents. Hazardous Decomposition Products: Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases will evolve when this material undergoes pyrolysis or combustion. Aldehydes, Carbon Monoxide, Carbon Dioxide, Hydrogen Sulfide, Ketones, Nitrogen Oxidesand other unidentified organic compounds may be formed upon combustion. SECTION 11 TOXICOLOGICAL INFORMATION Acute Toxicity Dermal LD50 >5.0 g/kg(Rabbit) OSHA: Non-Toxic Based on components(s) Oral LD50 >5.0 g/kg(Rat) OSHA: Non-Toxic Based on components(s) Carcinogenicity Classification Heavy Duty Motor Oil NTP: No IARC: Not Reviewed by IARC ACGIH: Not Reviewed OSHA: No SECTION 12 ECOLOGICAL INFORMATION _____ Environmental Impact Summary:

There is no ecological data available for this product. However, this product is an oil. It is persistent and does not readily biodegrade. However, it does not bioaccumulate.

SECTION 13 DISPOSAL CONSIDERATIONS
f RCRA Information: Under RCRA, it is the responsibility of the user of the material to determine, at the time of the disposal, whether the material meets RCRA criteria for hazardous waste. This is because material uses, transformations, mixtures, processes, etc. may affect the classification. Refer to the latest EPA, state and local regulations regarding proper disposal.
SECTION 14 TRANSPORT INFORMATION
US Department of Transportation Classification This material is not subject to DOT regulations under 49 CFR Parts 171-180. Oil: This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.
International Air Transport Association Not regulated under TATA rules. International Maritime Organization Classification Not regulated under International Maritime Organization rules.
SECTION 15 REGULATORY INFORMATION
FEDERAL REGULATORY STATUS OSHA Classification: Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200. Ozone Depleting Substances (40 CFR 82 Clean Air Act): This material does not contain nor was it directly manufactured with any Class
I or Class II ozone depleting substances. Superfund Amendment & Reauthorization Act (SARA) Title 1fI: There are no components in this product on the SARA 302 list. SARA Hazard Categories (311/312): Immediate Health:NO Dolayed Health:NO Fire:NO Pressure:NO Reactivity:NO
SARA Toxic Release Inventory (TRI) (313): Zinc compounds

Toxic Substances Control Act (TSCA) Status: All component(s) of this material is(are) listed on the EPA/TSCA Inventory of Chemical Substances.

Other Chemical Inventories: Component(s) of this material is (are) listed on the Australian AICS, Canadian DSL, Chinese Inventory, European EINECS, Korean Inventory, Philippines PICCS,

State Regulation The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

SECTION 16 OTHER INFORMATION

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Revision#: 15 Review Date: 02/13/2007 Revision Date: 12/19/2006 Revisions since last change (discussion): This Material Safety Data Sheet (MSDS) has been reviewed to fully comply with the guidance contained in the ANSI MSDS standard (ANSI 2400.1-2003). We encourage you to take the opportunity to read the MSDS and review the information contained therein.

SECTION 17 LABEL INFORMATION .

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM WITH THE REQUIREMENTS OF THE CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

PRODUCT CODE(S): 3194, 50012, 5001200001, 5001205203, 5001206021, 5001206205, 5001506205, 5056838, 5063444, 5063458, 5070719, 5071338, 5071352, 5071354, 5071355, 5071356, 5073235, 714072

Rotella® T Multigrade SAE 15W-40 (CJ-4)

ATTENTION!

- PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE OIL ACNE OR DERMATITIS. USED GASOLINE ENGINE OIL HAS BEEN SHOWN TO CAUSE CANCER IN LABORATORY ANIMALS.
- Precautionary Measures: Avoid prolonged or repeated contact with eyes, skin and clothing. Avoid breathing of vapors, fumes, or mist. Use only with adequate ventilation. Wash thoroughly after handling.

FIRST AID

Inhalation: If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility. Skin Contact: Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water, then wash with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment. Eye Contact: Flush with water. If irritation occurs, get medical attention. Ingestion: Do not induce vomiting. In general, no treatment is necessary unless large quantities of product are ingested. However, get medical

FIRE

attention.

In case of fire, Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO2) to extinguish flames. Do not use a direct stream of water. Material will float and can be re-ignited on surface of water.

SPILL OR LEAK Dike and contain spill.

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

CONTAINS: Highly refined petroleum oils, Mixture; Zinc Dialkyldithiophosphate, 68649-42-3; Proprietary additives, Mixture

NFPA Rating (Health, Fire, Reactivity): 0, 1, 0

TRANSPORTATION

US Department of Transportation Classification This material is not subject to DOT regulations under 49 CFR Parts 171-180.

Oil: This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flames or heat. Keep container closed and drum bungs in place.

Name and Address

SOPUS Products P.O. Box 4427 Houston, TX 77210-4427

ADMINISTRATIVE INFORMATION MANUFACTURER ADDRESS: SOPUS Products, P.O. Box 4427, Houston, TX. 77210-4427

THE INFORMATION CONTAINED IN THIS DATA SHEET IS BASED ON THE DATA AVAILABLE TO US AT THIS TIME, AND IS BELIEVED TO BE ACCURATE BASED UPON THAT : IT IS PROVIDED INDEPENDENTLY OF ANY SALE OF THE PRODUCT, FOR PURPOSE OF HAZARD :

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COMMUNICATION. IT IS NOT INTENDED TO CONSTITUTE PRODUCT PERFORMANCE INFORMATION, AND NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND IS MADE WITH RESPECT TO THE PRODUCT, UNDERLYING DATA OR THE INFORMATION CONTAINED HEREIN. YOU ARE URGED TO OBTAIN DATA SHEETS FOR ALL PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE, AND ARE ENCOURAGED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED HEREIN.

TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, YOU SHOULD CONSULT WITH YOUR LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. WE WILL NOT PROVIDE ADVICE ON SUCH MATTERS, OR BE RESPONSIBLE FOR ANY INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN. THE UNDERLYING DATA, AND THE INFORMATION PROVIDED HEREIN AS A RESULT OF THAT DATA, IS THE PROPERTY OF SOPUS PRODUCTS AND IS NOT TO BE THE SUBJECT OF SALE OR EXCHANGE WITHOUT THE EXPRESS WRITTEN CONSENT OF SOPUS PRODUCTS.

44815-10737-100R-02/13/2007

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# **Material Safety Data Sheet**

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### **RPM® Universal Gear Lubricant**

Product Use: Gear Lubricant Product Number(s): CPS225039, CPS225040 Synonyms: Chevron RPM® Universal Gear Lubricant SAE 80W-90, Chevron RPM® Universal Gear Lubricant SAE 85W-140 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America (800) LUBE TEK www.chevronlubricants.com

Transportation Emergency Response CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information Product Information: (800) LUBE TEK

#### SECTION 2 HAZARDS IDENTIFICATION

#### CLASSIFICATION

NON-HAZARDOUS SUBSTANCE according to the criteria of the Australia Safety and Compensation Council.

NON-DANGEROUS GOODS according to the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail.

Symbols: N - Dangerous for the environment

R52/53; Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S61; Avoid release to the environment. Refer to special instructions/safety data sheets.

#### IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if

absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

**Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

#### SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15-C50)	Mixture	60 - 100 %wt/wt

Note that the remaining composition contains nonhazardous ingredients or hazardous ingredients below the relevant threshold up to 100%.

#### SECTION 4 FIRST AID MEASURES

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

**Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

**Ingestion:** No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

#### SECTION 5 FIRE FIGHTING MEASURES

HazChem Code: None Allocated

FIRE CLASSIFICATION (AS1940): C2 (Combustible Liquid).

**EXTINGUISHING MEDIA:** Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

#### **PROTECTION OF FIRE FIGHTERS:**

**Fire Fighting Instructions:** This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

#### SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as

applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

**Reporting:** Report spills to local authorities as appropriate or required.

#### SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Keep out of the reach of children.

**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

#### SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

#### GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

#### ENGINEERING CONTROLS:

Use in a well-ventilated area.

#### PERSONAL PROTECTIVE EQUIPMENT

**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

**Respiratory Protection:** No respiratory protection is normally required. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

#### Occupational Exposure Limits:

Component	Country/ Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15-C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15-C50)	Australia	5 mg/m3			
White mineral oil	ACGIH	5 mg/m3	10 mg/m3		
White mineral oil	Australia	5 mg/m3			

Consult local authorities for appropriate values.

#### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Brown Physical State: Liquid Odor: Petroleum odor Flashpoint: (ASTM D92) 180 °C (356 °F) Minimum Autoignition: No data available Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable pH: Not Applicable Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F) Vapor Density (Air = 1): >1 **Boiling Point:** >371°C (699.8°F) Solubility: Soluble in hydrocarbons; insoluble in water Freezing Point: Not Applicable **Specific Gravity:** 0.89 @ 15°C (59°F) (Typical) Viscosity: 13.7 mm2/s @ 100°C (212°F) Minimum

#### SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected) Hazardous Polymerization: Hazardous polymerization will not occur.

### SECTION 11 TOXICOLOGICAL INFORMATION

#### IMMEDIATE HEALTH EFFECTS

**Eye Irritation:** The eye irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Sensitization:** The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

#### ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

#### SECTION 12 ECOLOGICAL INFORMATION

#### ECOTOXICITY

This material is expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

#### MOBILITY

No data available.

#### PERSISTENCE AND DEGRADABILITY

May cause long-term adverse effects in the aquatic environment. The product has not been tested. The statement has been derived from the properties of the individual components.

#### SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

#### SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

HazChem Code: None Allocated

**ADOT Shipping Description:** PETROLEUM LUBRICATING OIL - NOT REGULATED AS DANGEROUS GOODS FOR ROAD OR RAIL TRANSPORT UNDER THE ADG CODE

**IMO/IMDG Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

**ICAO/IATA Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

#### SECTION 15 REGULATORY INFORMATION

#### **REGULATORY LISTS SEARCHED:**

01-1=IARC Group 1 01-2A=IARC Group 2A 01-2B=IARC Group 2B

The following components of this material are found on the regulatory lists indicated. White mineral oil 01-1

#### CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

#### SECTION 16 OTHER INFORMATION

Poisons Schedule Number: None allocated

#### LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1 **REVISION STATEMENT:** This is a new Material Safety Data Sheet. **Revision Date:** DECEMBER 16, 2011

#### ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC:2011(2003)] by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

# **ZECOL**^M ZECOL PRODUCTS COMPANY

#### Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29CFR1910.1200. Standard must be consulted for specific requirements.

#### #950 RV PLUS ANTIFREEZE

QUICK IDENTIFIER Common Name: (used on label and list)

1 - 2 - 0

		ION		H HEALTH
Name	ZECOL PRODUCTS COMPANY			F
Address	4635 WILLOW DRIVE	Emergency Telephone No	(CHEM-TEL) 1-800-255-3924	FLAMMABILIT
City, State, and ZIP	MEDINA, MN 55340	Other Information Calls	(763) 478-3438	REACTIVITY Style NC-L503R
Signature of P Responsible for	Person or Preparation (Optional)	Date Prepared	MAY 1, 2005 (REV)	PERSONAL
SECTION	N 2 - HAZARDOUS INGRED	IENTS/IDENTITY		
łazardous Co	mponent(s) [chemical & common name(s)]	OSHA PEL ppm	ACGIH TLV ppm	CAS NO.
RV Antifro	eeze Grade Propylene Glyco	NE NE	NE	57-55-6
Ethanol		1000	1000	64-17-5
	N 3 - PHYSICAL & CHEMIC			
Boiling Point	N <b>3 - PHYSICAL &amp; CHEMIC</b> 175° F.	Specific Gravity (H ₂ O=1)	1.010 @ 60/60F	
Boiling Point Vapor Density (Air=	175º F.	Specific Gravity (H ₂ O=1) Vapor Pressure (mm Hg)	1.010 @ 60/60F 2.8 @ 20° C.	
Boiling Point Vapor Density (Air= Bolubility	175º F.	Specific Gravity (H ₂ O=1) Vapor	2.8 @ 20° C.	
Boiling Yapor Density (Air= Holubility In Water Appearance	175° F. 1) NA	Specific Gravity (H ₂ O=1) Vapor Pressure (mm Hg) Evaporation Rate	2.8 @ 20° C.	
Boiling Point Zapor Density (Air= Solubility n Water Appearance nd Odor	175° F. 1) NA Soluble	Specific Gravity (H ₂ O=1) Vapor Pressure (mm Hg) Evaporation Rate (N-Butyl Acetate=1)	2.8 @ 20° C.	
Boiling Point Vapor Density (Air= Solubility n Water Appearance and Odor SECTION Flash	175° F. 1) NA Soluble Pink liquid. Alcohol odor. N 4 - FIRE & EXPLOSION DA	Specific Gravity (H ₂ O=1) Vapor Pressure (mm Hg) Evaporation Rate (N-Butyl Acetate=1)	2.8 @ 20° C.	12.5
Boiling Point Vapor Density (Air= Solubility n Water Appearance and Odor SECTION Flash Point 148 Auto-Ignition	175° F. 1) NA Soluble Pink liquid. Alcohol odor. N 4 - FIRE & EXPLOSION DA ° F. Method Used COC	Specific Gravity (H ₂ O=1) Vapor Pressure (mm Hg) Evaporation Rate (N-Butyl Acetate=1) ATA Flammable Limits in Air % by Volume	2.8 @ 20° C.	
Boiling Point Vapor Density (Air= Solubility n Water Appearance and Odor SECTION Flash Point 148 Auto-Ignition Femperature	175° F. 1) NA Soluble Pink liquid. Alcohol odor. N 4 - FIRE & EXPLOSION DA ° F. Method Used COC NA ight- Water spray should be used to	Specific Gravity (H ₂ O=1) Vapor Pressure (mm Hg) Evaporation Rate (N-Butyl Acetate=1) ATA Flammable Limits in Air % by Volume Extinguisher	2.8 @ 20° C. NA LEL Lower 2.6 UEL Upper I, alcohol, foam, or carbon di- to disperse unignited vapors.	oxide. Use NIOSH/

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.

SECTION 5 - PHYSICAL HAZARDS (REACTIVITY DATA)	RV PLUS ANTIFREEZE
------------------------------------------------	--------------------

<b>SECTION 5 - PHYSICA</b>	L HAZARDS (REACTIVITY DATA) RV PLUS ANTIFREEZE (cor
Stability Unstable Condition	^s Keep away from extreme heat and flame.
Incompatability	
(Materials to Avoid) Strong (	oxidizers.
Hazardous	
Decomposition Products Carbon	
Hazardous Polymerization May Occur Will Not Occur	Conditions to Avoid
SECTION 6 - HEALTH	HAZARDS
^{1. Acute} Mild eye and skin irrit	2 Chronic
Signs and Symptoms of Exposure Irri	tated skin or eyes, diarrhea.
Medical Conditions Generally Aggravated by Exposure No	ne known.
Chemical Listed as Carcinogen	National Toxicology Yes 🗌 I.A.R.C. Yes 🗌 OSHA Yes 🗌
or Potential Carcinogen	Program No Monographs No No K
Emergency and	
First Àid Procedures           1. Inhalation	Remove victim to fresh air.
ROUTES $\sqrt{2. Eyes}$	Flush with water for 15 minutes. Call a physician.
$OF$ $\overline{3. Skin}$	· ·
ENTRY / 4. Ingestion	Flush with water. If irritation develops, call a physician.
/ SECTION 7 SDECIAL	Drink water to dilute. PRECAUTIONS AND SPILL/LEAK PROCEDURES
Precautions to be Taken	Avoid contact with eyes, skin, or clothing. Do not take internally. Upon contact with skin or eyes
in Handling and Storage	wash off with water. Avoid breathing mist or vapor. Store in a cool, dry, well-ventilated area.
Other	
Precautions	
Steps to be Taken in Case	Wear goggles, coveralls, impervious gloves and boots. Add dry absorbent; shovel or sweep up.
Material is Released or Spilled	Place in appropriate container and seal. Wash all contaminated clothing before reuse. In the event of a large spill, call the emergency telephone number shown on the front of this sheet.
Waste Disposal Methods (Consult federal, state, and local regulations)	Dispose of contaminated product, empty containers and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state, or local regulatory agencies to ascertain proper disposal procedures.
SECTION 8 - SPECIAL	PROTECTION INFORMATION/CONTROL MEASURES
Respiratory Protection (Specify Type) None	
Ventilation	

Ventilation	None beyond good room ventilation normally required.
Protective Gloves	Impervious.
Other Protective Clothing or Equipment	Goggles.
Work/Hygienic Practices	Avoid contact with eyes, skin, and clothing.



None	Brands That Matter	Office Products Group	
		MSDS #	3000
Section One:	Identification		
2707 Butterfie Oak Brook, IL		EMERGENCY MEDICAL NUME 888-786-0972	BER:
Product Name:	Sharpie Twin Tip Marker, Supe Micro Marker, Sharpie Grip Ma Marker, Sharpie Liquid Tip Ma	narpie Ultra Fine Point Marker, Sharpie Extra Fine Marker, Sharpie Chisel Tip M er Sharpie Marker, Super Sharpie Twin Tip Marker, Sharpie Mini Fine Point Ma arker, Sharpie Retractable Fine Point Marker, Sharpie Magnum Marker, Sharpi arker. Sharpie Premium, Sharpie CD Marker, Sharpie Pro, Sharpie Pro King Siz um Barrel, Sharpie Brush Tip Marker, Esterbrook by Sharpie.	arker, Sharpie e King Size
Colors:	All Colors		
be labeled in a Products bear evaluation by toxic or injurior	accordance with the voluntary chronic ing the AP Approved Product Seal of a medical expert, subject to review b us to humans, or to cause acute toxic		: Seal. cological
Section Two:	Hazard Identification		
		r use on skin. Do not ingest. Contact with eyes may cause irritation.	
Section Three:	Composition		
: Butanol (71-36	ა-3), Propanol (71-23-8), Diacetone A	Alcohol (123-42-2), Ethanol (64-17-5), pigments, dyes, additives	
Section Four:	First Aid Measures	3	
Inhalation:	Remove source of irritation. If	symptoms persist seek medical attention	
Skin Contact:	Wash with soap and water. If	irritation persists seek medical attention.	
Eye Contact:	Rinse eyes with water, if irritat	ion persists seek medical attention.	
Ingestion:	If symptoms occur seek medic	cal attention.	
Section Five:	Fire Fighting Meas	ures	
Flash Point:	N/A		
Extinguishing Media	a: As appropriate	for surrounding area.	
Special Fire Fightin	ng Measures: N/A		
Hazardous combus	-		
Section Six:	Accidental Release	e Measures	
In Case of Spill or A	Accidental Release: Wipe up with	n absorbent material.	
Section Seven:	Handling and Stora	age	
Handling:	Do not shake marker.		
Storage:	Keep cap on marker when not	t in use.	
Section Eight:	Exposure C	ontrols and Personal Protection	
Eye Prot	tection: None under normal u	use conditions.	
Clothing	: None under normal u	use conditions.	
Respirat	or: None under normal u	use conditions.	



# Office Products Group

MSDS #

3000

Brands That Matter

#### MATERIAL SAFETY DATA SHEET

Section Nine:	Physical and Chemical Properties	
Section Nille.	Filysical and Chemical Froperties	
Boiling Point:	N/A	
Specific Gravity:	N/A	
Vapor Pressure:	N/A	
Solubility in Water:	N/A	
Evaporation Rate:	N/A	
Appearance/Odor:	Marker/Alcohol (ink)	
Section Ten:	Stability and Reactivity	
Stability:	N/A	
Conditions to Avoid:	Avoid exposure to heat, flame or other sources of ignition.	
Chemical Incompatibility:	N/A	
Hazardous Polymerizatio	pn: N/A.	
,		
Section Eleven:	Toxicological Information	
See Section Two: Hazar	rd Identification for any hazards	
	- -	
Section Twelve:	Ecological Information	
Not available		

#### Section Thirteen: Disposal Considerations

Dispose of in accordance with all Federal, State, and Local Regulations.

Section Fourteen:	Transport Information	
DOT:	Not available	
IATA:	Not available	
IMO:	Not available	

Section Fifteen:

Regulatory Information

United States:

All components in this product are listed on or exempt from reporting under the Federal Toxic Substances Control Act (TSCA).

#### Section Sixteen: Other Information

HMIS Code	
Health	N/A
Flammability	N/A
Reactivity	N/A
Personal Protection	N/A

NewellRubbermaid, Inc has been advised by Counsel that the OSHA Hazard Communication Standard and the Health Canada Workplace Hazardous Materials Information Standard do not apply to the Sanford Product described in this Material Safety Data Sheet. The reasons for the exemptions are contained in 29 CFR 1910.1200(b)(6)(ix) as amended Sept 14, 2009 per the Code of Federal Regulations and also Canadian Hazardous Products Act part 12 section (f) as amended June 1, 2009. The information contained in this MSDS is forwarded to you for your information, but is not meant to imply that the product is covered by nor is this MSDS meant to comply with all requirements of the hazard communication standards.

0=Minimal / 4 = Severe

Version No. 13005-12B Date of Issue: February 2012

ANSI-Z400.1-2003 Format

#### Section 1: PRODUCT & COMPANY IDENTIFICATION

Product Name: Additional Names:	Simple Green [®] All-Purpose Cleaner Simple Green [®] Concentrated Cleaner Degrease Simple Green [®] Scrubbing Pad (Fluid in pad only		rizer
Manufacturer's Part	Number: *Please refer to page 4		
Company:	Sunshine Makers, Inc. 15922 Pacific Coast Highway Huntington Beach, CA 92649 USA		
Telephone: Emergency Phone:	800-228-0709 • 562-795-6000 Chem-Tel 24-Hour Emergency Service: 800-255	Fax: 5-3924	562-592-3830

#### Section 2: HAZARDS IDENTIFICATION

Emergency Overview: CAUTION. Irritant. This is a Green colored liquid with a sassafras added odor. Scrubbing pad is a green fibrous rectangle infused with Simple Green Cleaner.



<u>NFPA/HMIS Rating:</u> Health = 1 = slight Fire, Reactivity, and Special = 0 = minimal

#### **Potential Health Effects**

Eye Contact:	Mildly irritating.
Skin Contact:	No adverse effects expected under typical use conditions. Prolonged exposure may cause dryness.
	Chemically sensitive individuals may experience mild irritation.
Ingestion:	May cause stomach or intestinal irritation if swallowed.
Inhalation	No adverse effects expected under typical use conditions. Adequate ventilation should be present for

Inhalation: No adverse effects expected under typical use conditions. Adequate ventilation should be present for prolonged usage in small enclosed areas.

#### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS Number</u>	Percent Range
Water	7732-18-5	≥ 78%
2-butoxyethanol	111-76-2	≤ 5%
Ethoxylated Alcohol	68439-46-3	≤ 5%
Tetrapotassium Pyrophosphate	7320-34-5	≤ 5%
Sodium Citrate	68-04-2	≤ 5%
Fragrance	Proprietary Mixture	≤ 1%
Colorant	Proprietary Mixture	≤1%

#### Section 4: FIRST AID MEASURES

If Inhaled: If adverse effect occurs, move to fresh air.

- If on skin: If adverse effect occurs, rinse skin with water.
- If in eyes: Flush with plenty of water. After 5 minutes of flushing, remove contact lenses, if present. Continue flushing for at least 10 more minutes. If irritation persists seek medical attention.

If ingested: Drink plenty of water to dilute.

Version No. 13005-12B Date of Issue: February 2012

ANSI-Z400.1-2003 Format

#### Section 5: FIRE FIGHTING MEASURES

This formula is stable, non-flammable, and will not burn. No special procedures necessary Flammability: Non-flammable		
Flash Point:	Non-flammable	
Suitable Extinguishing Media: Extinguishing Media to Avoid Special Exposure Hazards: Special Protective Equipment:	Use Dry chemical, CO2, water spray or "alcohol" foam. High volume jet water. In event of fire created carbon oxides, oxides of phosphorus may be formed. Wear positive pressure self-contained breathing apparatus; Wear full protective clothing.	

#### Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: See section 8 – personal protection.

Environmental Precautions: Do not allow into open waterways and ground water systems.

Method for Clean Up: Dilute with water and rinse into sanitary sewer system or soak up with inert absorbent material.

#### Section 7: HANDLING AND STORAGE

Handling: Keep container tightly closed. Ensure adequate ventilation. Keep out of reach of children.

Storage: Keep in cool dry area.

#### Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

#### **Exposure Limit Values:**

2-butoxyethanol Tetrapotassium Pyrophosphate OSHA PEL TWA 50 ppm (240 mg/m³) ACGIH TLV 20 ppm (97 mg/m³) 5 mg/m³

#### **Exposure Controls:**

Eye Contact: Use protective glasses if splashing or spray-back is likely.

Respiratory: Use in well ventilated areas.

Skin Contact: Prolonged exposure or dermal sensitive individuals should use protective gloves.

#### Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Green Liquid	Vapor P	ressure:	18 mmHg @2	0°C; 23.5 mmHg @26°C
Odor:	Added Sassafras odor	Density	:	8.5 lb/gal;	
Specific Gravity:	$1.010 \pm 0.010$	Water S	Solubility:	100%	
pH:	9.5 ± 0.5	VOC co	mposite Pai	rtial Pressure:	TBD
<b>Boiling Point:</b>	~210°F (98 °C)	VOC:	CARB Met	hod 310	3.8%
Freezing Point:	~ 32°F (0 °C)		SCAQMD	Method 313	2.8%
Nutrient Content	Phosphorous: 0.28%	Sulfur: ^	~180 ppm		
	Chloride: ~110 ppm	Fluorine	e: ~90 ppm		

#### Material Safety Data Sheet: Simple Green[®] All-Purpose Cleaner and Simple Green[®] Scrubbing Pad

Version No. 13005-12B Date of Issue: February 2012

ANSI-Z400.1-2003 Format

#### Section 10: STABILITY AND REACTIVITY

Stability:StableMaterials to Avoid:None knownHazardous Decomposition Products:Normal products of combustion - CO, CO2; Oxides of Phosphorous may occur.

#### Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity:Oral  $LD_{50}$  (rat)> 5 g/kg body weightDermal  $LD_{50}$  (rabbit)> 5 g/kg body weight

Toxicity calculated from ingredients using OECD SERIES ON TESTING AND ASSESSMENT Number 33

Carcinogens: No ingredients are listed by OSHA, IARC, or NTP as known or suspected carcinogens.

#### Section 12: ECOLOGICAL INFORMATION

- Hazard to wild mammals: Low, based on toxicology profile
- Hazard to avian species: Low, based on toxicology profile
- Hazard to aquatic organisms: Low, based on toxicology profile

Chemical Fate Information: Readily Biodegradable per OECD 301D, Closed Bottle Test

#### Section 13: DISPOSAL CONSIDERATIONS

Appropriate Method for Disposal:

Unused Product:	*Dilute with water to use concentration and dispose by sanitary sewer.
Used Product:	*This product can enter into clarifiers and oil/water separators. Used product may be hazardous depending on the cleaning application and resulting contaminants.
Empty Containers:	*Triple-rinse with water and offer for recycling if available in your area. Otherwise, dispose as non-hazardous waste.

*Dispose of used or unused product, and empty containers in accordance with the local, State, Provincial, and Federal regulations for your location. Never dispose of used degreasing rinsates into lakes, streams, and open bodies of water or storm drains.

#### Section 14: TRANSPORT INFORMATION

U.S. Department of Trans IMO / IDMG: ICAO/ IATA: ADR/RID:	sportation (DOT) / Canadian TDG Not classified as Dangerous Not classified as Dangerous Not classified as Dangerous	: Not Regulated	
U.N. Number	Not Required	Proper Shipping Name:	Detergent Solution
Hazard Class:	Non-Hazardous	Marine Pollutant:	No

#### Material Safety Data Sheet: Simple Green[®] All-Purpose Cleaner and Simple Green[®] Scrubbing Pad

Version No. 13005-12B Date of Issue: February 2012 ANSI-Z400.1-2003 Format

#### Section 15: REGULATORY INFORMATION

All components are listed on: No components listed under:	EINECS, TSCA, DSL and Clean Air Act Section	d AICS Inventory. 112; Clean Water Act 307 & 311	
	• •	rting requirements of Section 31 of 1986 as Category N230 – Cert	•
RCRA Status: Not	a hazardous waste	CERCLA Status :	No components listed
State Right To Know Lists			
2-butoxyethan	ol Illinois	s, Massachusetts, New Jersey, Pe	ennsylvania, Rhode Island
WHMIS Classification – Categ	ory D, subcategory 2B, e	eye irritant	
Name		ist – Schedule 1 – CEPA mental Protection Act)	NPRI Inventory
2-butoxyethanol		Yes	No

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by Canada's Controlled Products Regulation.

#### Section 16: OTHER INFORMATION

Questions about the information found on this MSDS should be directed to:

SUNSHINE MAKERS, INC. - TECHNICAL DEPARTMENT

15922 Pacific Coast Hwy. Huntington Beach, CA 92649

Phone: 800/228-0709 [8am-5pm Pacific time, Mon-Fri]

*Fax:* 562/592-3830

Email: infoweb@simplegreen.com

#### CAGE CODE 1Z575 GSA/FSS - CONTRACT NO. GS-07F-0065J Scrubbing Pad GSA/BPA - CONTRACT NO. GS-07F-BSIMP National Stock Numbers & Industrial Part Numbers:

Scrubbing

auonai Stock Iv	unibers & muustria	ii i art Numbers.	
Simple Green	Part Number	NSN	Size
	13012	7930-01-342-5315	24 oz spray (12/case)
	13005	7930-01-306-8369	1 Gallon (6/case)
	13006	7930-01-342-5316	5 Gallon
	13016	7930-01-342-5317	15 Gallon
	13008	7930-01-342-4145	55 Gallon
	13103	N/A	2oz samples
	13225	N/A	2.5 Gallon
	13275	N/A	275 Gallon tote
	48049	N/A	1 Gallon Conc. w/ 32oz dilution
Scrubbing Pad	10224	7930-01-346-9148	Each (24/case)
	-	•	

Retail Number	rs:
Part Number	Size
13002	16 oz Trigger (12/case)
13005	1 Gallon (6/case)
13013	24 oz Trigger (12/case)
13014	67 oz / 2 L (6/case)
13033	32 oz Trigger (12/case)
80007	Tier display holding 13005 (36/Tier)

part number is for both industrial and retail **International Part Numbers May Differ.

DISCLAIMER: The information provided with this MSDS is furnished in good faith and without warranty of any kind. Personnel handling this material must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of this material and the safety and health of employees and customers. Sunshine Makers, Inc. assumes no additional liability or responsibility resulting from the use of, or reliance on this information.

### HALLIBURTON

# **MATERIAL SAFETY DATA SHEET**

#### Product Trade Name: SODA ASH

**Revision Date:** 

24-Mar-2014

#### **1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Product Trade Name: Synonyms: Chemical Family: Application:	SODA ASH None Carbonate Buffer
Manufacturer/Supplier	Halliburton Energy Services P.O. Box 1431 Duncan, Oklahoma 73536-0431 Emergency Telephone: (281) 575-5000
Prepared By	Chemical Compliance Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Sodium carbonate	497-19-8	60 - 100%	Not applicable	Not applicable

#### 3. HAZARDS IDENTIFICATION

**Hazard Overview** 

May cause eye, skin, and respiratory irritation.

#### 4. FIRST AID MEASURES

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Skin	Wash with soap and water. Get medical attention if irritation persists.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Ingestion	Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.
Notes to Physician	Not Applicable

#### 5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Flash Point/Range (C): Flash Point Method: Autoignition Temperature (F): Autoignition Temperature (C): Flammability Limits in Air - Low Flammability Limits in Air - Upp Flammability Limits in Air - Upp	ver (oz./ft3): ver (%): Not Determined	
Fire Extinguishing Media	Water fog, carbon dioxide, foam, dry chemical.	
Special Exposure Hazards	Decomposition in fire may produce toxic gases.	
Special Protective Equipment for Fire-Fighters	Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.	
NFPA Ratings: HMIS Ratings:	Health 2, Flammability 0, Reactivity 0 Health 2, Flammability 0, Physical Hazard 0 , PPE: B	

#### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures	Use appropriate protective equipment. Avoid creating and breathing dust.
Environmental Precautionary Measures	Prevent from entering sewers, waterways, or low areas.
Procedure for Cleaning / Absorption	Scoop up and remove.

#### 7. HANDLING AND STORAGE

Handling Precautions	Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.
Storage Information	Store away from acids. Store in a cool, dry location. Product has a shelf life of 36 months.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	Use in a well ventilated area. Localized ventilation should be used to control dust levels.
Personal Protective Equipment	If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
<b>Respiratory Protection</b>	Dust/mist respirator. (N95, P2/P3)
Hand Protection	Normal work gloves.
Skin Protection	Normal work coveralls.
Eye Protection	Dust proof goggles.

SODA ASH Page 2 of 6 Eyewash fountains and safety showers must be easily accessible.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Powder
Physical State: Color: Odor: pH: Specific Gravity @ 20 C (Water=1): Density @ 20 C (lbs./gallon): Bulk Density @ 20 C (lbs/ft3): Boiling Point/Range (F): Boiling Point/Range (C): Freezing Point/Range (C): Freezing Point/Range (C): Vapor Pressure @ 20 C (mmHg): Vapor Density (Air=1): Percent Volatiles: Evaporation Rate (Butyl Acetate=1): Solubility in Water (g/100ml):	Powder White Odorless 11.5 2.5 Not Determined 48- 62 Not Determined Not Determined Not Determined Not Determined Not Determined Not Determined Not Determined Not Determined Not Determined Partially soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon): Viscosity, Dynamic @ 20 C (centipoise): Viscosity, Kinematic @ 20 C (centistokes): Partition Coefficient/n-Octanol/Water: Molecular Weight (g/mole):	Not Determined Not Determined Not Determined Not Determined 105.99

#### 10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong acids.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

#### 11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Sympotoms related to exposure Acute Toxicity	
Inhalation	May cause respiratory irritation.
Eye Contact	May cause eye irritation
Skin Contact	Prolonged or repeated contact may cause skin irritation.
Ingestion	Irritation of the mouth, throat, and stomach.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
	SODA ASH

Page 3 of 6

#### Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium carbonate	497-19-8	4090 mg/kg (Rat) 2800 mg/kg (Rat)	2210 mg/kg (Mouse) > 2000 mg/kg (Rabbit)	LC50: 2.3 mg/L (Rat) 2h

#### 12. ECOLOGICAL INFORMATION

#### **Ecotoxicological Information**

#### **Ecotoxicity Product**

Acute Fish Toxicity:	TLM24: 385 mg/l (Lepomis macrochirus)
Acute Crustaceans Toxicity:	Not determined
Acute Algae Toxicity:	Not determined

#### **Ecotoxicity Substance**

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to	Toxicity to Invertebrates
			-	Microorganisms	_
Sodium carbonate	497-19-8	EC50: 242 mg/L	TLM24: 385 mg/l	No information available	EC50: 265 mg/L (Daphnia
		(Nitzschia)	(Lepomis macrochirus)		magna)
			LC50: 310-1220 mg/L		EC50(48h): 200 – 227
			(Pimephales promelas)		mg/L (Ceriodaphnia sp.)
			LC50(96h): 300 mg/L		<b>U</b> ( <b>1</b> )
			(Lepomis macrochirus)		

**12.2 Persistence and degradability** The methods for determining biodegradability are not applicable to inorganic substances.

Substances	Persistence and Degradability
Sodium carbonate	The methods for determining biodegradability are not applicable
	to inorganic substances.

#### 12.3 Bioaccumulative potential

Does not bioaccumulate	
Substances	Log Pow
Sodium carbonate	0

#### 12.4 Mobility in soil

No information available

#### 12.5 Results of PBT and vPvB assessment

No information available.

#### 12.6 Other adverse effects

#### **13. DISPOSAL CONSIDERATIONS**

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

#### 14. TRANSPORT INFORMATION

#### Land Transportation

DOT Not restricted

#### Canadian TDG Not restricted

ADR Not restricted

#### **Air Transportation**

ICAO/IATA Not restricted

#### Sea Transportation

IMDG Not restricted

#### **Other Transportation Information**

Labels:

None

#### 15. REGULATORY INFORMATION

#### **US Regulations**

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.
Canadian Regulations	
Canadian DSL Inventory	All components listed on inventory or are exempt.
WHMIS Hazard Class	Un-Controlled
16. OTHER INFORMATION	N

The following sections have been revised since the last issue of this SDS Not applicable

Additional information	For additional information on the use of this product, contact your local Halliburton representative.
	For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.
Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

***END OF MSDS***



## SAFETY DATA SHEET

Sullair AWF

Prepared according to U.S. OSHA. CMA_ANSI. Canadian WHMIS_Australian WorkSafe_Japanese Industrial Standard JIS Z 7250:2000. and European Union REACH Regulations

#### **SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT NAME: CAS#: SUPPLIER/MANUFACTURER'S NAME: ADDRESS: **EMERGENCY PHONE:** BUSINESS PHONE: WEB SITE: DATE OF PREPARATION: DATE OF LAST REVISION:

Sullair AWF Mixture D-A Lubricant Company, Inc. 801 Edwards Drive, Lebanon, IN 46052 USA TOLL-FREE in USA/Canada 317-923-5321 (Product Information) www.dalube.com November 8, 2011 April 9, 2013 Includes: Sullair AWF250025 266 Sullair AWF250030 758 Sullair AWF 250030 757 Sullair AWF02250098 040

800-899-9004

#### **SECTION 2 - HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW:** This product is amber liquid with a mild petroleum hydrocarbon odor. **HEALTH HAZARDS:** Low order of toxicity. Excessive exposure may result in eye, skin and respiratory irritation. **FLAMMABILITY:** This product is not classified as a flammable liquid. Flashpoint: >185°C (>365°F) **ENVIRONMENTAL EFFECTS:** The Environmental effects of this product have not been investigated. Floats on water. If it enters soil, it will be absorbed to soil particles and will not be mobile. This product may cause gastrointestinal distress in birds and mammals through ingestion during pelage grooming.

US DOT SYMBOLS

CANADA (WHMIS) SYMBOLS

Non-Regulated

Not Controlled



EU LABELING AND CLASSIFICATION:

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex 1 EC# 276-735-8 This substance is not classified in the Annex I of Directive 67/548/EEC EC# 265-161-3 This substance is not classified in the Annex I of Directive 67/548/EEC Methacrylate Copolymer is exempt from listing

EC# 272-028-3 This substance is not classified in the Annex I of Directive 67/548/EEC

#### GHSHazardClassification(s):

None

#### HazardStatement(s):

H320: Causes eye irritation H315: Causes skin irritation H332: Harmful if inhaled H335: May cause respiratory irritation

#### EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

#### [Xi] Irritant

#### RiskPhrases:

R36/37/38: Irritating to eyes, respiratory system and skin

#### PrecautionaryStatement(s):

P260: Do not breath dust/fume/gas/mist/vapors/spray
P264: Wash hands thoroughly after handling
P271: Use only in well ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection

#### SafetvPhrases:

S24/25: Avoid contact with skin and eyesS36: Wear suitable protective clothingS37/39: Wear suitable gloves and eye/face protectionS45: In case of accident or if you feel unwell, seek medical advice immediately.

#### HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

**EYE:** Contact may cause mild irritation including stinging, watering and redness.

SKIN: Prolonged contact may cause mild skin irritation. No harmful effects from skin absorption are expected.

## **SAFETY DATA SHEET**

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**INHALATION:** Breathing vapors or fumes may cause respiratory irritation.

INGESTION: Ingestion may cause irritation of the digestive tract, nausea, vomiting and diarrhea.

#### CHRONIC: None known

TARGET ORGANS:

ACUTE: Eye, Respiratory System, Skin CH

CHRONIC: None known

#### **SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS**

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Highly Refined Base Stock Oil	72623-83-7 64742-58-1	276-735-8 265-161-3	Not Listed	<90%	HAZARD CLASSIFICATION: [Xi] Irritant RISK PHRASES: R36/37/38
Methacrylate Copolymer	Not Assigned	Exempt from listing	Not Listed	<8%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Zinc Alkyl Dithiophosphate	68649-42-3	272-028-3	Not Listed	<2%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

**NOTE:** ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2004 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard *JIS Z* 7250: 2000.

#### **SECTION 4 - FIRST-AID MEASURES**

Contaminated individuals of chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take copy of label, bill of lading and/or MSDS to health professional with contaminated individual.

**EYE CONTACT:** If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Remove contact lenses if worn. Seek medical attention if irritation persists.

**SKIN CONTACT:** Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder before re-use.

**INHALATION:** If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

**INGESTION:** If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Pre-existing skin, respiratory system or eye problems may be aggravated by prolonged contact.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

#### **SECTION 5 - FIRE-FIGHTING MEASURES**

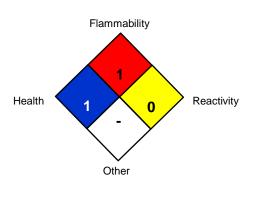
FLASH POINT:	>185°C (>365°F) ASTM D-92				
AUTOIGNITION TEMPERATURE:	Not Established				
FLAMMABLE LIMITS (in air by volume, %):	Lower (LEL): Not Available Upper (UEL): Not Available				
FIRE EXTINGUISHING MATERIALS:	Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.				
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Do not use straight streams of water. This product is a combustible liquid at temperatures above flash point.				
Explosion Sensitivity to Mechanical Impact:	Not Sensitive.				
Explosion Sensitivity to Static Discharge:	Sensitive				
SPECIAL FIRE-FIGHTING PROCEDURES:	Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done				

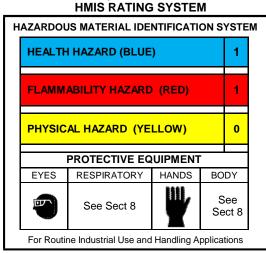
# SAFETY DATA SHEET

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without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.







Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

#### SECTION 6 - ACCIDENTAL RELEASE MEASURES

#### **<u>SPILLANDLEAKRESPONSE</u>**: Personnel should be trained for spill response operations.

**SPILLS:** Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up with an absorbent material and place in an appropriate container for disposal. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

If spill of any amount is made into or upon navigable waters, the contiguous zone or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

#### **SECTION 7 - HANDLING and STORAGE**

**WORK PRACTICES AND HYGIENE PRACTICES:** As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

**STORAGE AND HANDLING PRACTICES:** Containers of this product must be properly labeled. Store containers in a cool, dry location. Keep container tightly closed when not in use. Do not store at temperatures above 120°F (49°C) Store away from strong oxidizers. Empty containers retain residue and can be dangerous. DO NOT pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other ignition sources; they may explode and cause injury.

#### **SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION**

#### EXPOSURELIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	SWA
Highly Refined Base Stock Oil	72623-83-7 64742-58-1	5 mg/m ³ Oil Mist	5 mg/m ³ Oil Mist	5 mg/m ³ Oil Mist
Methacrylate Copolymer	Not Assigned	Not Listed	Not Listed	Not Listed
Zinc Alkyl Dithiophosphate	68649-42-3	Not Listed	Not Listed	Not Listed

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

## SAFETY DATA SHEET

## Sullair AWF

**VENTILATION AND ENGINEERING CONTROLS:** Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

- **RESPIRATORY PROTECTION:** Not normally required. Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.
- **EYE PROTECTION:** Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.
- **HAND PROTECTION:** Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

**BODY PROTECTION:** Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

## **SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES**

PHYSICAL STATE: APPEARANCE & ODOR: ODOR THRESHOLD (PPM): VAPOR PRESSURE (mmHg): VAPOR DENSITY (AIR=1): EVAPORATION RATE (nBuAc = 1): BOILING POINT (C°): FREEZING POINT (C°): pH: SPECIFIC GRAVITY 20°C: (WATER =1) SOLUBILITY IN WATER (%) VISCOSITY @ 100°C cSt

Liquid Amber color with petroleum hydrocarbon odor. Mild <0.013 kPa (0.1 mm Hg) at 20°C No Data Available. No Data Available >500°F (>260°C) No Data Available Not Applicable 0.87 @60°F Negligible 6.95

## **SECTION 10 - STABILITY and REACTIVITY**

STABILITY: Product is stable

**DECOMPOSITION PRODUCTS:** material does not decompose under normal storage conditions. When heated to decomposition this product produces carbon dioxide and carbon monoxide.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers

HAZARDOUS POLYMERIZATION: Will not occur.

**CONDITIONS TO AVOID:** Contact with incompatible materials. Excessive heat and high energy sources of ignition.

## **SECTION 11 - TOXICOLOGICAL INFORMATION**

**TOXICITY DATA:** Toxicity data is not available for mixture:

CAS# 72623-83-7, 64742-58-1		
Acute Oral Toxicity LD50	>5,000 mg/kg	Rat
Acute Dermal Toxicity LD50	>5,000 mg/kg	Rat

**SUSPECTED CANCER AGENT:** This product may contain an ingredient(s) that is found on one or more of the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is considered to be, or suspected to be a cancer-causing agent by these agencies.

**IRRITANCY OF PRODUCT:** Contact with this product can be irritating to exposed skin, eyes and respiratory system.

## SAFETY DATA SHEET

## Sullair AWF

**REPRODUCTIVE TOXICITY INFORMATION:** No information concerning the effects of this product and its components on the human reproductive system.

**ADDITIONAL INFORMATION:** Use oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal.

### **SECTION 12 - ECOLOGICAL INFORMATION**

#### ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

**ENVIRONMENTAL STABILITY:** Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.

**EFFECT OF MATERIAL ON PLANTS or ANIMALS:** If applied to leaves, this product may kill grasses and small plants by interfering with transpiration and respiration. This product is not toxic to fish but may coat gill structures resulting in suffocation if spilled in shallow, running water. Product may be moderately toxic to amphibians by preventing dermal respiration. This product may cause gastrointestinal distress in birds and mammals through ingestion during pelage grooming.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on this product's effects on aquatic life.

#### **SECTION 13 - DISPOSAL CONSIDERATIONS**

**PREPARING WASTES FOR DISPOSAL:** Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains, or in water courses. Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

Container disposal should be done in accordance with prevailing regulations, preferably to a recognized collector or contractor.

### **SECTION 14 - TRANSPORTATION INFORMATION**

USDOT;IATA;IMO;ADR:

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION. PROPER SHIPPING NAME: Non-Regulated Material HAZARD CLASS NUMBER and DESCRIPTION: None

UN IDENTIFICATION NUMBER: None

PACKING GROUP: None

DOT LABEL(S) REQUIRED: None

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): None

MARINE POLLUTANT: None of the ingredients are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING REGULATIONS:

This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

This product is not classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is not classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

### **SECTION 15 - REGULATORY INFORMATION**

#### UNITEDSTATESREGULATIONS

SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows: SARA 313 Reporting Zinc Alkyl Dithiophosphate CAS# 68649-42-3 <2%

## SAFETY DATA SHEET

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TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

#### SARA311/312:

Acute Health: Yes Chronic Health: No Fire: No Reactivity: No

<u>U.S.SARATHRESHOLDPLANNINGQUANTITY:</u> There are no specific Threshold Planning Quantities for this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

#### U.S.CERCLAREPORTABLEQUANTITY(RQ): None

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): This product does not contain ingredient(s) which are on the California Proposition 65 lists.

#### **CANADIANREGULATIONS:**

CANADIAN DSL/NDSL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

**CANADIAN WHMIS CLASSIFICATION and SYMBOLS:** This product is categorized as Not Controlled, as per the Controlled Product Regulations

#### EUROPEANECONOMICCOMMUNITYINFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

#### AUSTRALIANINFORMATIONFORPRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed or exempt on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

#### JAPANESEINFORMATIONFORPRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

#### INTERNATIONALCHEMICALINVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:	
Asia-Pac:	Listed or Exempt
Australian Inventory of Chemical Substances (AICS):	Listed or Exempt
Korean Existing Chemicals List (ECL):	Listed or Exempt
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed or Exempt
Philippines Inventory if Chemicals and Chemical Substances (PICCS):	Listed or Exempt
Swiss Giftliste List of Toxic Substances:	Listed or Exempt
U.S. TSCA:	Listed or Exempt

### **SECTION 16 - OTHER INFORMATION**

Disclaimer: The information in this document is believed to be correct as of the date issued. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.



#### 10268 Trade Name: SUPER PLUG* MSDS NO. Revision Date: 12/07/2007 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION 1. Trade Name: SUPER PLUG* **Chemical Family:** Mixture Product Use: Drilling Fluid Additive. **Emergency Telephone (24 hr.):** 281-561-1600 Supplied by: M-I L.L.C. P.O. Box 42842 Houston, TX 77242 www.miswaco.com **Telephone Number:** 281-561-1511 Product Safety Group Prepared by:

Revision Number:

HMIS Rating Health: 1* Flammability: 0

4

Physical Hazard: 0

**PPE:** E

**HMIS Key:** 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

## 2. HAZARDS IDENTIFICATION

Emergency Overview:	Caution! May cause eye, skin, and respiratory tract irritation. Long term inhalation of particulates may cause lung damage. Cancer hazard. Contains crystalline silica which may cause cancer.		
Canadian Classification: UN PIN No: Not regulated.	WHMIS Class: D2A		
Physical Powder. State:	Odor Odorless Color: Tan to grey		
Potential Health Effects:			
Acute Effects			
Eye Contact: Skin Contact: Inhalation: Ingestion:	May cause mechanical irritation May cause mechanical irritation. Long term contact can cause skin dryness. May cause mechanical irritation. May cause gastric distress, nausea and vomiting if ingested.		
Carcinogenicity & Chronic Effects:	See Section 11 - Toxicological Information.		
Routes of Exposure: Target Organs/Medical Conditions Aggravated by Overexposure:	Eyes. Dermal (skin) contact. Inhalation. Eyes. Skin. Respiratory System.		

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Bentonite	1302-78-9	80 - 95	No comments.
Silica, crystalline, quartz	14808-60-7	2 - 15	No comments.
Gypsum (Calcium sulfate) (CAS 7778-18-9 also	13397-24-5	0 - 1	No comments.
applies.)			
Silica, crystalline, Tridymite	15468-32-3	0 - 1	No comments.

	4. FIRST AID MEASURES
Eye Contact:	Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
General notes:	Persons seeking medical attention should carry a copy of this MSDS with them.

## 5. FIRE FIGHTING MEASURES

Flammable Properties

# Flash Point: F (C): NA Flammable Limits in Air - Lower (%): NA Flammable Limits in Air - Upper (%): NA Autoignition Temperature: F (C): NA Flammability Class: NA Other Flammable Properties: ND Extinguishing Media: This material is not combustible. Use extinguishing media appropriate for surrounding fire.

Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Not determined.

6.	ACCIDENTAL RELEASE MEASURES
Personal Precautions:	Use personal protective equipment identified in Section 8.
Spill Procedures:	Evacuate surrounding area, if necessary. Wet product may create a slipping hazard. Contain spilled material. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.
Environmental Precautions:	Do not allow to enter sewer or surface and subsurface waters. Waste must be disposed of in accordance with federal, state and local laws.

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#### Handling:

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## 7. HANDLING AND STORAGE

Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only in a well ventilated area. Wash thoroughly after handling.

Storage:

Store in dry, well-ventilated area. Keep container closed. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Bentonite	1302-78-9	80 - 95	NA	NA	NA	(1)
Silica, crystalline, quartz	14808-60-7	2 - 15	0.025 mg/m ³	see Table Z-3	NIOSH: 0.05 mg/m ³ TWA	· · · ·
					(10H day/40H	
					wk)	
Gypsum (Calcium sulfate)	13397-24-5	0 - 1	10 mg/m ³	0		None
(CAS 7778-18-9 also				(total); 5		
applies.)				mg/m³		
				(respirable)		
Silica, crystalline, Tridymite	15468-32-3	0 - 1	0.05 mg/m ³	see Table Z-3	NA	(R)

#### Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable). (R) Respirable fraction (ACGIH);

Table Z-3: PEL for Mineral Dusts containing crystalline silica are 10 mg/m³ / (%SiO2+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite.

**Engineering Controls:** Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

#### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

Eye/Face Protection:	Dust resistant safety goggles.
Skin Protection:	Wear appropriate clothing to prevent repeated or prolonged skin contact. Chemical resistant gloves recommended for prolonged or repeated contact. Use protective gloves made of: Nitrile. Neoprene.
Respiratory Protection:	All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.
	If exposed to airborne particles of this product use at least a NIOSH-approved N95 half-mask disposable or re-useable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or re-useable particulate respirator.

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**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Tan to grey
Odorless
Powder.
ND
2.3 - 2.6
Insoluble
NA
ND
ND
NA
NA
NA
ND

	10. STABILITY AND REACTIVITY
Chemical Stability:	Stable
Conditions to Avoid:	ND
Materials to Avoid:	Not determined.
Hazardous Decomposition	None known
Products:	
Hazardous Polymerization:	Will not occur
-	

## 11. TOXICOLOGICAL INFORMATION

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	Component Toxicological Summary
Silica, crystalline, quartz	Crystalline silica is the most widely occurring of all minerals. The most common form of silica is sand. The International Agency for Research on Cancer (IARC) has designated crystalline silica in the form of quartz or cristobalite a Group 1 (carcinogenic to humans). This designation was based on an increased risk of lung cancer among crystalline silica exposed workers. IARC did note that carcinogenicity of crystalline silica in humans was not detected in all industrial circumstances studied. Further, carcinogenicity of crystalline silica may be dependent on inherent characteristics of the crystalline silica or external factors affecting its biological activity or distribution of polymorphs. (IARC Vol. 68, 1997, p. 41). The National Toxicology Program (NTP) classifies crystalline silica as "reasonably anticipated to cause cancer in humans" (6th Annual Report on Carcinogens, 1991). Long term inhalation of crystalline silica can also result in the lung disease, silicosis. Symptoms of this disease include coughing and shortness of breath. (NJ HSFS, January 1996)

#### **Product Toxicological Information:**

Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

## 12. ECOLOGICAL INFORMATION

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	12.	ECOLOGICAL INFORMATION
Component Ecotoxicity Data: N	lo data	available.
Product Ecotoxicity Data:	Cont	tact M-I Environmental Affairs Department for available product ecotoxicity data.
Biodegration:	ND	
Bioaccumulation:	ND	
Octanol/Water Partition	ND	
Coefficient:		
	13.	DISPOSAL CONSIDERATIONS
Waste Classification:	ND	

 Waste Management:
 Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

 Disposed Mathematical
 Disposed methods are product as a provide a figure time. Cheveld this product the product the product the product as a provide a figure time.

## **Disposal Method:** Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

U.S. DOT Shipping Description:	Not regulated
Canada TDG Shipping Description: UN PIN No:	Not regulated. Not regulated.
IMDG Shipping Description:	Not regulated.
ICAO/IATA Shipping Description:	Not regulated.

## **15. REGULATORY INFORMATION**

U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Delayed (chronic) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro, F	CA 65 Repro, M
	/ 11- 64.3		ι (u	Calicel	Dev. IUX.	Repio. I	Repro. IVI
Silica, crystalline, quartz				Х			
Silica, crystalline, Tridymite				Х			

**International Chemical Inventories** 

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Revision Date: 12/07/2007

**MSDS NO.** 10268

Australia AICS - Components are listed or exempt from listing. Canada DSL - Components are listed or exempt from listing.

China Inventory - Components are listed or exempt from listing.

European Union EINECS/ELINCS - Components are listed or exempt from listing.

Japan METI ENCS - Components are listed or exempt from listing.

Korea TCCL ECL - Components are listed or exempt from listing.

Philippine PICCS - Components are listed or exempt from listing.

U.S. TSCA - Components are listed or exempt from listing.

U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

#### **Canadian Classification:**

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class:

D2A

## **16. OTHER INFORMATION**

The following sections have been revised: 1, 16

#### NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

#### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

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# MSDS No. 10203 Trade Name: SUPERFOAM* Revision Date: 07/22/2010 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name:	SUPERFO	DAM*	
Chemical Family: Product Use:	Mixture Drilling flu	id additive.	
Supplied by:	M-I L.L.C. P.O. Box Houston, www.misy	TX 77242	
Telephone Number:	281-561-1		
Emergency Telephone			
Prepared by:	Product S	afety Group	
Revision No.	5		
HMIS Rating Health: 2	Flammability: 3	Physical Hazard: 0	PPE:

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

J

## 2. HAZARDS IDENTIFICATION

Emergency Overview:	Warning! Flammable liquid and vapor. May cause severe eye irritation. May cause skin and respiratory tract irritation. Vapors or mists may cause central nervous system (CNS) effects if inhaled.				
Canadian Classification: UN PIN No: UN1993	WHMIS Class: B2 D2B				
Physical State: Liquid	Color: Amber Odor: Alcohol				
Potential Health Effects: Acute Effects Eye Contact: Skin Contact: Inhalation: Ingestion:	May cause severe eye irritation. May be irritating to the skin. Prolonged or repeated contact may cause defatting of the skin and/or dermatitis (inflammation). Vapors or mists may be irritating to the respiratory tract. May cause central nervous system (CNS) effects. May cause gastric distress, nausea and vomiting if ingested. Aspiration can be a hazard if this material is swallowed.				
Carcinogenicity & Chronic Effects: Routes of Exposure: Target Organs/Medical Conditions Aggravated by Overexposure:	See Section 11 - Toxicological Information. Eyes. Dermal (skin) contact. Inhalation. Eyes. Skin. Respiratory System. Central Nervous System (CNS).				

Trade Name: SUPERFOAM*

MSDS No. 10203

Revision Date: 07/22/2010

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Surfactant		30 - 60	No comments.
Water	7732-18-5	10 - 30	No comments.
Isopropyl alcohol	67-63-0	10 - 30	No comments.

### 4. FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with large amounts of water. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Seek immediate medical attention.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Do not induce vomiting. Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. Get immediate medical attention.
General notes: Notes To Physician:	Persons seeking medical attention should carry a copy of this MSDS with them. Aspiration may cause severe lung damage. Evacuate stomach in a way which avoids aspiration.

## 5. FIRE FIGHTING MEASURES

#### **Flammable Properties**

Flash Point: F (C):74F (23C)Flash Point Method:PMCCFlammable Limits in Air - Lower (%): NDFlammable Limits in Air - Upper (%): NDAutoignition Temperature: F (C):Flammability Class:ICOther Flammable Properties:NDExtinguishing Media:Water fog, carbon dioxide, foam, dry chemical.

#### **Protection Of Fire-Fighters:**

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways. Note that flammable vapors may form an ignitable mixture with air. Vapors may travel considerable distances and flash back if ignited.

Hazardous Combustion Products: Oxides of Carbon. Sulfur. Nitrogen.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** 

Use personal protective equipment identified in Section 8.

Trade Name: SUPERFOAM* Revision Date: 07/22/2010

MSDS No. 10203

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Spill Procedures:	Evacuate the spill area with the exception of the spill response team. Keep personnel removed and upwind of spill. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Shut off leak if it can be done safely. Contain spilled material. Do not allow spilled material to enter sewers, storm drains or surface waters. Absorb in vermiculite, dry sand or earth. Place into containers for disposal. Use non-sparking or explosion proof means to transfer material to containers. Note that flammable/combustible vapors may form an ignitable mixture with air. Vapors may travel considerable distances from spill and flash back, if ignited.
Environmental Precautions:	Waste must be disposed of in accordance with federal, state and local laws. In the U.S., for products with reportable quanitity (RQ) components - if the RQ is exceeded,

## 7. HANDLING AND STORAGE

report to National Spill Response Office at 1 800 424 8802.

Handling:	Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid breathing vapors or spray mists. Use only in a well ventilated area. Wash thoroughly after handling. Ground and bond containers when transferring material.
Storage:	Store in dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Surfactant		30 - 60	NA	NA	NA	None
Water	7732-18-5	10 - 30	NA	NA	NA	None
Isopropyl alcohol	67-63-0	10 - 30	200 ppm, 400	400 ppm		
			ppm (STEL)		IDLH	
					(NIOSH)	

Exposure Limits (TLV & PEL - 8H TWA):

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

#### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

**Eye/Face Protection:** Wear chemical safety goggles.

**Skin Protection:** Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as nitrile or neoprene.

Trade Name: SUPERFOAM* Revision Date: 07/22/2010

MSDS No. 10203

**Respiratory Protection:** 

All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne mist/aerosol of this product, use at least a NIOSH-approved N95 half-mask disposable or re-usable particulate respirator. In work environments containing oil mist/aerosol, use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

If exposed to vapors from this product use a NIOSH/MSHA-approved respirator with an Organic Vapor cartridge.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Amber
Odor:	Alcohol
Physical State:	Liquid
pH:	7.0 - 8.0 (neat)
Specific Gravity (H2O = 1):	1.02 g/cc
Solubility (Water):	Soluble
Flash Point: F (C):	74F (23C)
Melting/Freezing Point:	ND
Boiling Point:	180F (82C)
Vapor Pressure:	ND
Vapor Density (Air=1):	ND
Evaporation Rate:	ND
Evaporation Rate:	ND
Odor Threshold(s):	ND
( <i>'</i>	

## **10. STABILITY AND REACTIVITY**

Chemical Stability: Conditions to Avoid:	Stable Keep away from heat, sparks and flame.
Materials to Avoid:	Contact with oxidizing agents.
Hazardous Decomposition Products:	For thermal decomposition products, see Section 5.
Hazardous Polymerization	Will not occur

## 11. TOXICOLOGICAL INFORMATION

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	CAS No.	Acute Data
Isopropyl alcohol	67-63-0	Oral LD50: >4720 mg/kg; Dermal LD50: >12,900 mg/kg
		(rabbit); Inhalation LC50: 12,000 ppm/8H (rat)

#### Product Toxicological Information:

No toxicological data is available for this product.

Trade Name: SUPERFOAM*

MSDS No. 10203

Revision Date: 07/22/2010

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## **12. ECOLOGICAL INFORMATION**

Component Ecotoxicity Data:	Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.		
Ingredient	CAS No.	Data	
Isopropyl alcohol	67-63-0	LC50 96H: 94,900 mg/l (fathead minnow 29D old); LC50 96H: 61,200 mg/l (fathead minnow 31D old); EC50 5M: 35,390 mg/l (Photobacterium phosphoreum)	
Product Ecotoxicity Data: Biodegration: Bioaccumulation: Octanol/Water Partition Coefficient:	Contact M-I Environmental Affairs Department for available product ecotoxicity data. ND ND ND		
	13. DISPOS	AL CONSIDERATIONS	
Waste Classification:	ND		
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.		
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.		

## 14. TRANSPORT INFORMATION

U.S. DOT Shipping Description:

Emergency Response Guide No.: Canada TDG Shipping Description: UN PIN No: IMDG Shipping Description: ICAO/IATA Shipping Description: Flammable liquids, n.o.s. (contains isopropyl alcohol), Class 3, UN1993, PG III 128 See U.S. Shipping Description. UN1993 See U.S. Shipping Description. See U.S. Shipping Description.

## **15. REGULATORY INFORMATION**

U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Fire hazard. Immediate (acute) health hazard.

Trade Name: SUPERFOAM* Revision Date: 07/22/2010

MSDS No. 10203

#### Page 6/6

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro. F	CA 65 Repro. M
Isopropyl alcohol		1.0%					

#### **International Chemical Inventories**

Australia AICS - Contains a component that is not listed. Canada DSL - Components are listed or exempt from listing. China Inventory - Contains a component that is not listed. European Union EINECS/ELINCS - Contains a component(s) that is not listed. Japan METI ENCS - Contains a component that is not listed. Korea TCCL ECL - Contains a component that is not listed. New Zealand - Contains a component that is not listed. Philippine PICCS - Contains a component that is not listed. U.S. TSCA - Components are listed or exempt from listing. U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

#### **Canadian Classification:**

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: B2 D2B

#### **16. OTHER INFORMATION**

The following sections have been revised: 1, 4, 6, 8, 14, 15, 16.

#### NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

#### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

The Valvoline Company

Date Prepared: 01/14/02

MSDS No: 999.0300933-002.004I

SYNPOWER FS 75W-90 GEAR OIL 12/1 QT

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity Product Name: SYNPOWER FS 75W-90 GEAR OIL 12/1 QT General or Generic ID: SEMI-SYNTHETIC LUBRICATING OIL

Company	Telephone Numbers	
The Valvoline Company	Emergency:	1-800-274-5263
P.O. Box 14000		
Lexington, KY 40512	Information:	1-859-357-7206

2. COMPOSITION/INFORMATION ON INGREDIENTS Ingredient(s) CAS Number % (by weight) SEMI-SYNTHETIC LUBRICATING OIL 100.0

#### 3. HAZARDS IDENTIFICATION

Potential Health Effects

#### Eye

Unlikely to cause eye irritation or injury.

#### Skin

Prolonged or repeated contact may dry and crack the skin.

#### Swallowing

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

#### Inhalation

It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring).

Symptoms of Exposure stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways).

Target Organ Effects No data

Developmental Information No data

Cancer Information No data

Other Health Effects No data

#### 4. FIRST AID MEASURES

#### Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

#### Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

#### Swallowing

Do not induce vomiting. Give one glass of milk or water, and get medical attention immediately. If possible, do not leave victim unattended.

#### Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Note to Physicians

Preexisting disorders of the following organs ( or organ systems) may be aggravated by exposure to this material: skin.

#### 5. FIRE FIGHTING MEASURES

#### Flash Point

273.2 F (134.0 C) PMCC

Explosive Limit No data

Autoignition Temperature No data

Hazardous Products of Combustion May form: aldehydes, carbon dioxide and carbon monoxide, hydrogen sulfide, sulfur oxides, various hydrocarbons.

Fire and Explosion Hazards Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

Extinguishing Media regular foam, carbon dioxide, dry chemical.

Fire Fighting Instructions

Water or foam may cause frothing which can be violent and possibly endanger the life of the firefighter. Wear a self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment. Refer to the personal protective equipment section of this MSDS.

NFPA Rating

Health - 1, Flammability - 1, Reactivity - 1

ACCIDENTAL RELEASE MEASURES 6.

Small Spill

Absorb liquid on vermiculite, floor absorbent or other absorbent material.

Large Spill

Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source. Prevent from entering drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occured.

HANDLING AND STORAGE 7.

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

#### Storage

Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection

Wear safety glasses in compliance with OSHA regulations. (Consult your safety representative.)

Skin Protection Wear resistant gloves such as: nitrile rubber, To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Respiratory Protections Not required under normal conditions of use.

Engineering Controls Not required under normal conditions of use.

Exposure Guidelines Component

_____

```
PHYSICAL AND CHEMICAL PROPERTIES
9.
Boiling Point
    No data
Vapor Pressure
    No data
Specific Vapor Density
    No data
Specific Gravity
    .860 @ 60.00 F
Liquid Density
     7.160 lbs/gal @ 60.00 F
     .860 kg/l @ 15.60 C
Percent Volatiles (Including Water)
    No data
Evaporation Rate
    No data
Appearance
    No data
State
    LIQUID
Physical Form
    No data
Color
    LIGHT
Odor
    MILD
рΗ
    No data
Viscosity
              - 15.6 cst
cst @
    14.3
                                   @
                                            100 C
    111.0
                                   40 C
Solubility in Water
     INSOLUBLE
```

10. STABILITY AND REACTIVITY

```
Hazardous Polymerization
Product will not undergo hazardous polymerization.
```

Hazardous Decomposition

May form: aldehydes, carbon dioxide and carbon monoxide, hydrogen sulfide, sulfur oxides, various hydrocarbons.

Chemical Stability Stable.

Incompatibility

Avoid contact with: strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

No data

12. ECOLOGICAL INFORMATION

No data

#### 13. DISPOSAL CONSIDERATION

Waste Management Information Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

```
DOT Information - 49 CFR 172.101
DOT Description:
Not Regulated
```

Container/Mode: CASES/SURFACE - NO EXCEPTIONS

NOS Component: None

RQ (Reportable Quantity) - 49 CFR 172.101 Not applicable

15. REGULATORY INFORMATION

```
US Federal Regulations
CERCLA RQ - 40 CFR 302.4
None
SARA 302 Components - 40 CFR 355 Appendix A
None
Section 311/312 Hazard Class - 40 CFR 370.2
Immediate() Delayed() Fire() Reactive() Sudden
Release of Pressure()
SARA 313 Components - 40 CFR 372.65
None
```

International Regulations Inventory Status Not determined

State and Local Regulations California Proposition 65 None

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

Last page



## CITGO Synthetic Gear Lubricant, SAE 50 Material Safety Data Sheet

CITGO Petroleum	Corporation
P.O. Box 4689	-
Houston, TX 77210	

MSDS No.

631815001

1/4/2013

Revision Date

IMPORTANT: This MSDS is prepared in accordance with 29 CFR 1910.1200. Read this MSDS before transporting, handling, storing or disposing of this product and forward this information to employees, customers and users of this product.

## **Emergency Overview**

Physical State Liquid. Color Amber.

Odor Mild.

Protect eyes from misting or spraying material. Protect exposed skin from repeated or prolonged exposure. Do not store material in open or unmarked containers. Spills may create a slipping hazard.

Hazard R	anking	gs
	HMIS	NFPA
Health Hazard	0	0
Fire Hazard	1	1
Reactivity	0	0
* = Chronic Health	Hazard	
Protective I	Equipr	nent
Minimum Red See Section 8		

## **SECTION 1. PRODUCT IDENTIFICATION**

Trade Name	CITGO Synthetic Gear Lubricant, SAE 50	Technical Contact	(800) 248-4684
Product Number	631815001	Medical Emergency	(832) 486-4700
CAS Number	Mixture.	CHEMTREC Emergency (United States Only)	(800) 424-9300
Product Family	Gear oil		
Synonyms	Synthetic lubricant; Gear oil; CITGO [®] Material Code: 631815001		

## **SECTION 2. COMPOSITION**

**Component Name(s)** Proprietary Ingredients Hexanedioic acid, diisodecyl ester **CAS Registry No.** Proprietary Mixture 27178-16-1 **Concentration (%)** 60 - 100 5 - 20

## SECTION 3. HAZARDS IDENTIFICATION

### Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact.

#### Signs and Symptoms of Acute Exposure

Inhalation	At elevated temperatures or in enclosed spaces, product mist or vapors may irritate the mucous membranes of the nose, the throat, bronchi, and lungs.
Eye Contact	This product can cause transient mild eye irritation with short-term contact with liquid sprays or mists. Symptoms include stinging, watering, redness, and swelling.

MSDS No.	631815001	Revision Date	1/4/2013	Continued on Next Page	Page Number: 1

## **CITGO Synthetic Gear Lubricant, SAE 50**

Skin Contact	This material can cause mild skin irritation from prolonged or repeated skin contact. Injection under the skin can cause inflammation and swelling. Injection of pressurized hydrocarbons can cause severe, permanent tissue damage. Initial symptoms may be minor. Injection of petroleum hydrocarbons requires immediate medical attention.
Ingestion	If swallowed, large volumes of material can cause generalized depression, headache, drowsiness, nausea, vomiting and diarrhea. Smaller doses can cause a laxative effect.
Chronic Health Effects Summary	This product contains a petroleum-based mineral oil. Prolonged or repeated skin contact can cause mild irritation and inflammation characterized by drying, cracking, (dermatitis) or oil acne. Repeated or prolonged inhalation of petroleum-based mineral oil mists at concentrations above applicable workplace exposure levels can cause respiratory irritation or other pulmonary effects.
Conditions Aggravated by Exposure	Disorders of the following organs or organ systems that may be aggravated by significant exposure to this material or its components include: Skin
Target Organs	May cause damage to the following organs: skin.

**Carcinogenic Potential** This product is not known to contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP.

# OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Health Hazard Classification		OSHA Physical Hazard Classification				
Irritant Sensitizer Toxic Highly Toxic Corrosive Carcinogenic	Combus Flamma Compres		Explosive Oxidizer Organic Peroxide		Pyrophoric Water-reactive Unstable	

## **SECTION 4. FIRST AID MEASURES**

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

Inhalation	Vaporization is not expected at ambient temperatures. This material is not expected to cause inhalation-related disorders under anticipated conditions of use. In case of overexposure, move the person to fresh air.
Eye Contact	Check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists.
Skin Contact	If burned by hot material, cool skin by quenching with large amounts of cool water. For contact with product at ambient temperatures, remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Clean or discard contaminated leather goods. If material is injected under the skin, seek medical attention immediately.
Ingestion	Do not induce vomiting unless directed to by a physician. Do not give anything to drink unless directed to by a physician. Never give anything by mouth to a person who is not fully conscious. If significant amounts are swallowed or irritation or discomfort occurs, seek medical attention immediately.
Notes to Physician	INGESTION: The viscosity range of the product(s) represented by this MSDS is greater than 100 SUS at 100°F. Careful gastric lavage may be considered to evacuate large quantities of material.

## **SECTION 5. FIRE FIGHTING MEASURES**

NFPA Flammability Classification	NFPA Class-IIIB combustible material.		
Flash Point	Open cup: 210°C (410°F) (Clev	eland.).	
Lower Flammable Limit	No data.	Upper Flammable Limit	No data.
Autoignition Temperature	Not available.		
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and oxides of sulfur and/or nitrogen.		
Special Properties	This material will release vapors ignite when exposed to a source explosive force. Mists or sprays	e of ignition. In enclosed spa	ces, vapors can ignite with
Extinguishing Media	Use dry chemical, foam, carbon Carbon dioxide and inert gas ca dioxide or inert gas in confined s	n displace oxygen. Use cau	, ,
Protection of Fire Fighters	Firefighters must use full bunker self-contained breathing appara decomposition products and oxy	tus to protect against potentia	

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard; do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spill as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage. This material will float on water. Absorbent pads and similar materials can be used. Comply with all laws and regulations.

## SECTION 7. HANDLING AND STORAGE

Handling

Keep containers closed and do not handle or store near heat, sparks, or any other potential ignition sources. Avoid contact with oxidizing agents. Never siphon by mouth. Avoid contact with eyes, skin, and clothing. Avoid contamination and extreme temperatures.

Empty containers may contain product residues that can ignite with explosive force. Drain and purge equipment, as necessary, to remove material residues. Follow proper entry procedures, including compliance with 29 CFR 1910.146 prior to entering confined spaces such as tanks or pits. Use appropriate respiratory protection when concentrations exceed any established occupational exposure level (See Section 8). Promptly remove contaminated clothing. Wash exposed skin thoroughly with soap and water after handling.

Do not pressurize, cut, weld, braze solder, drill, grind or expose containers to flames, sparks, heat or other potential ignition sources. Protect containers against physical damage. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.

#### **CITGO Synthetic Gear Lubricant, SAE 50**

Storage

Keep container tightly closed. Store in a cool, dry, well-ventilated area. Store only in approved containers. Do not store with strong oxidizing agents. Do not store at elevated temperatures. Avoid storing product in direct sunlight for extended periods of time. Storage area must meet OSHA requirements and applicable fire codes. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers or waste residues of this product.

## SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Engineering Controls** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). An eye wash station and safety shower should be located near the work-station.

**Personal Protective Equipment** Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.



Eye Protection	Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Wear goggles if splashing or spraying is anticipated. Wear goggles and face shield if material is heated above 125°F (51°C). Have suitable eye wash water available.
Hand Protection	None required for incidental contact. Use gloves constructed of chemical resistant materials such as heavy nitrile rubber if frequent or prolonged contact is expected. Use heat-protective gloves when handling product at elevated temperatures.
Body Protection	Use clean protective clothing if splashing or spraying conditions are present. Protective clothing may include long-sleeve outer garment, apron, or lab coat. If significant contact occurs, remove oil-contaminated clothing as soon as possible and promptly shower. Launder contaminated clothing before reuse or discard. Wear heat protective boots and protective clothing when handling material at elevated temperatures.
Respiratory Protection	The need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).
General Comments	Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents or harsh abrasives as skin cleaners. Since specific exposure standards/control limits have not been established for this product, the "Oil Mist, Mineral" exposure limits shown below are suggested as minimum control guidelines.
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#### **Occupational Exposure Guidelines**

Substance	Applicable Workplace Exposure Levels
Oil, Mineral (Mist)	ACGIH (United States).
	TWA: 5 mg/m ³ 8 hour(s).
	STEL: 10 mg/m ³ 15 minute(s).
	OSHA (United States).
	TWA: 5 mg/m ³ 8 hour(s).

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (TYPICAL)

Physical State	Liquid.	Color	Amber.		Odor	Mild.
Specific Gravity	0.88 (Water = 1)	рН	Not applica	able	Vapor Density	>2 (Air = 1)
Boiling Range	Not available.			Melting Point	/Freezing	Not available.
Vapor Pressure	<0.001 kPa (<0.01 mi	m Hg) (at 2	20°C)	Volatili	ty	Negligible volatility.
Solubility in Water	Negligible solubility in	cold wate	er.	Viscosi (cSt @		132
Flash Point	Open cup: 210°C (41	0°F) (Clev	eland.).			
Additional Properties	Gravity, ºAPI (ASTM Density = 7.14 Lbs/ga	,	3.6 @ 60° F			

## SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable.	Hazardous Polymerization Not expected to occur.
Conditions to Avoid	Keep away from extreme he	eat, strong acids and strong oxidizing conditions.
Materials Incompatibility	Oxidizing materials.	
Hazardous Decomposition Products	No additional hazardous de products identified in Sectio	composition products were identified other than the combustion n 5 of this MSDS.

## SECTION 11. TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

**Toxicity Data** 

Hexanedioic acid, diisodecyl ester ORAL (LD50): Acute: 20500 mg/kg [Rat].

## **SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity** Analysis for ecological effects has not been conducted on this product. However, if spilled, this product and any contaminated soil or water may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl.

**Environmental Fate** An environmental fate analysis is not available for this specific product. Plants and animals may experience harmful or fatal effects when coated with petroleum products. Petroleum-based (mineral) lubricating oils normally will float on water. In stagnant or slow-flowing waterways, an oil layer can cover a large surface area. As a result, this oil layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway may be sufficient to cause a fish kill or create an anaerobic environment.

1/4/2013

## **SECTION 13. DISPOSAL CONSIDERATIONS**

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a "hazardous waste" at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact your regional US EPA office for guidance concerning case specific disposal issues. Empty drums and pails retain residue. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose this product's empty container to heat, flame, or other ignition sources. DO NOT attempt to clean it. Empty drums and pails should be drained completely, properly bunged or sealed, and promptly sent to a reconditioner.

## **SECTION 14. TRANSPORT INFORMATION**

Not regulated.

The shipping description below may not represent requirements for all modes of transportation, shipping methods or locations outside of the United States.

**US DOT Status** Not regulated by the U.S. Department of Transportation as a hazardous material.

Proper Shipping Name Not regulated.

Hazard Class

Packing GroupNot applicable.UN/NA NumberNot regulated.

Reportable Quantity A Reportable Quantity (RQ) has not been established for this material.

Placard(s)



**Emergency Response** Not applicable. **Guide No.** 

MARPOL III Status

Not a DOT "Marine Pollutant" per 49 CFR 171.8.

**Oil:** The product(s) represented by this MSDS is (are) regulated as "oil" under 49 CFR Part 130. Shipments by rail or highway in packaging having a capacity of 3500 gallons or more or in a quantity greater 42,000 gallons are subject to these requirements. In addition, mixtures containing 10% or more of this product may be subject to these requirements.

## SECTION 15. REGULATORY INFORMATION

TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
SARA 302/304 Emergency Planning and Notification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.
SARA 311/312 Hazard Identification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories: No SARA 311/312 hazard categories identified.

#### **CITGO Synthetic Gear Lubricant, SAE 50**

SARA 313 Toxic Chemical Notification and Release Reporting	This product contains the following components in concentrations above <i>de minimis</i> levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No components were identified.
CERCLA	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. This product or refinery stream is not known to contain chemical substances subject to this statute. However, it is recommended that you contact state and local authorities to determine if there are any other reporting requirements in the event of a spill.
Clean Water Act (CWA)	This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.
California Proposition 65	This product is not known to contain any components for which the State of California has found to cause cancer, birth defects or other reproductive harm.
New Jersey Right-to-Know Label	For New Jersey R-T-K labeling requirements, refer to components listed in Section 2.
Additional Remarks	No additional regulatory remarks.

## **SECTION 16. OTHER INFORMATION**

#### Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

<b>REVISION INFORMATION</b>			
Manalan Number	04		

Version Number	3.1		
<b>Revision Date</b>	1/4/2013		
ABBREVIATIONS			
AP: Approximately	EQ: Equal	>: Greater Than	<: Less Than
NA: Not Applicable	ND: No Data	NE: Not Established	
ACGIH: American Confer	rence of Governmental Industrial	Hygienists	
AIHA: American Industrial	Hygiene Association		
IARC: International Agen	cy for Research on Cancer		
NIOSH: National Institute	of Occupational Safety and Hea	alth	
NPCA: National Paint and	d Coating Manufacturers Associa	ation	
EPA: US Environmental I	Protection Agency		
HMIS: Hazardous Materia	als Information System		
OSHA: Occupational Saf	ety and Health Administration		
NTP: National Toxicology	/ Program		
NFPA: National Fire Prot	ection Association		

#### **DISCLAIMER OF LIABILITY**

THE INFORMATION IN THIS MSDS WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS MSDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS MSDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

***** END OF MSDS *****



## CITGO Synthetic Gear Lubricant, SAE 75W-90 Material Safety Data Sheet

CITGO Petroleum Corporatior
P.O. Box 4689
Houston, TX 77210

MSDS No.

631809001

1/4/2013

Revision Date

IMPORTANT: This MSDS is prepared in accordance with 29 CFR 1910.1200. Read this MSDS before transporting, handling, storing or disposing of this product and forward this information to employees, customers and users of this product.

## **Emergency Overview**

Physical State Liquid. Color Amber.

Odor Mild.

Protect eyes from misting or spraying material. Protect exposed skin from repeated or prolonged exposure. Do not store material in open or unmarked containers. Spills may create a slipping hazard.

	Hazard Rankings				
		HMIS	NFPA		
s	Health Hazard	0	0		
	Fire Hazard	1	1		
	Reactivity	0	0		
	* = Chronic Health Hazard				
	Protective Equipment				
	Minimum Recommended See Section 8 for Details				

## **SECTION 1. PRODUCT IDENTIFICATION**

Trade Name	CITGO Synthetic Gear Lubricant, SAE 75W-90	Technical Contact	(800) 248-4684
Product Number	631809001	Medical Emergency	(832) 486-4700
CAS Number	Mixture.	CHEMTREC Emergency (United States Only)	(800) 424-9300
Product Family	Gear oil		
Synonyms	Synthetic lubricant; CITGO [®] Material Code: 631809001		

## **SECTION 2. COMPOSITION**

<b>Component Name(s)</b>	<b>CAS Registry No.</b>	Concentration (%)
Proprietary Ingredients	Proprietary Mixture	60 - 100
Olefin sulfide	68937-96-2	1 - 5
Phosphoric acid ester amine salt	Proprietary	1 - 5

## SECTION 3. HAZARDS IDENTIFICATION

### Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact.

#### Signs and Symptoms of Acute Exposure

Inhalation	At elevated temperatures or in enclosed spaces, product mist or vapors may irritate the mucous membranes of the nose, the throat, bronchi, and lungs.
Eye Contact	This product can cause transient mild eye irritation with short-term contact with liquid sprays or mists. Symptoms include stinging, watering, redness, and swelling.

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W3D3 N0.	031009001	Revision Date	1/4/2013	Continued on Next Page	Fage Number. 1

## CITGO Synthetic Gear Lubricant, SAE 75W-90

Skin Contact	This material can cause mild skin irritation from prolonged or repeated skin contact. Injection under the skin can cause inflammation and swelling. Injection of pressurized hydrocarbons can cause severe, permanent tissue damage. Initial symptoms may be minor. Injection of petroleum hydrocarbons requires immediate medical attention.
Ingestion	If swallowed, large volumes of material can cause generalized depression, headache, drowsiness, nausea, vomiting and diarrhea. Smaller doses can cause a laxative effect.
Chronic Health Effects Summary	Prolonged or repeated skin contact can cause mild irritation and inflammation characterized by drying, cracking, (dermatitis) or oil acne. Repeated or prolonged inhalation of petroleum-based mineral oil mists at concentrations above applicable workplace exposure levels can cause respiratory irritation or other pulmonary effects.
Conditions Aggravated by Exposure	Disorders of the following organs or organ systems that may be aggravated by significant exposure to this material or its components include: Skin
Target Organs	May cause damage to the following organs: skin.

## **Carcinogenic Potential** This product is not known to contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP.

OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Healt	h Hazard Classification		OSH	A Physical Hazard Cl	assifica	ition	
Irritant Toxic Corrosive	Sensitizer       Highly Toxic       Carcinogenic	Combustible Flammable Compressed Gas		Explosive Oxidizer Organic Peroxide		Pyrophoric Water-reactive Unstable	

## **SECTION 4. FIRST AID MEASURES**

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

Inhalation	Vaporization is not expected at ambient temperatures. This material is not expected to cause inhalation-related disorders under anticipated conditions of use. In case of overexposure, move the person to fresh air.
Eye Contact	Check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists.
Skin Contact	If burned by hot material, cool skin by quenching with large amounts of cool water. For contact with product at ambient temperatures, remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Clean or discard contaminated leather goods. If material is injected under the skin, seek medical attention immediately.
Ingestion	Do not induce vomiting unless directed to by a physician. Do not give anything to drink unless directed to by a physician. Never give anything by mouth to a person who is not fully conscious. If significant amounts are swallowed or irritation or discomfort occurs, seek medical attention immediately.
Notes to Physician	INGESTION: The viscosity range of the product(s) represented by this MSDS is greater than 100 SUS at 100°F. Careful gastric lavage may be considered to evacuate large quantities of material.

## **SECTION 5. FIRE FIGHTING MEASURES**

NFPA Flammability Classification	NFPA Class-IIIB combustible material.			
Flash Point	Open cup: 204°C (399°F) (Cleveland.).			
Lower Flammable Limit	No data.	Upper Flammable Limit	No data.	
Autoignition Temperature	AP 399°C (AP 750°F)			
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and oxides of sulfur and/or nitrogen.			
Special Properties	This material will release vapors when heated above the flash point temperature that can ignite when exposed to a source of ignition. In enclosed spaces, vapors can ignite with explosive force. Mists or sprays may burn at temperatures below the flash point.			
Extinguishing Media	Use dry chemical, foam, carbon dioxide or water fog. Water or foam may cause frothing. Carbon dioxide and inert gas can displace oxygen. Use caution when applying carbon dioxide or inert gas in confined spaces.			
Protection of Fire Fighters	Firefighters must use full bunker self-contained breathing appara decomposition products and oxy	tus to protect against potentia		

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard; do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spill as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage. This material will float on water. Absorbent pads and similar materials can be used. Comply with all laws and regulations.

## SECTION 7. HANDLING AND STORAGE

Handling

Keep containers closed and do not handle or store near heat, sparks, or any other potential ignition sources. Avoid contact with oxidizing agents. Never siphon by mouth. Avoid contact with eyes, skin, and clothing. Avoid contamination and extreme temperatures.

Empty containers may contain product residues that can ignite with explosive force. Drain and purge equipment, as necessary, to remove material residues. Follow proper entry procedures, including compliance with 29 CFR 1910.146 prior to entering confined spaces such as tanks or pits. Use appropriate respiratory protection when concentrations exceed any established occupational exposure level (See Section 8). Promptly remove contaminated clothing. Wash exposed skin thoroughly with soap and water after handling.

Do not pressurize, cut, weld, braze solder, drill, grind or expose containers to flames, sparks, heat or other potential ignition sources. Protect containers against physical damage. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.

### CITGO Synthetic Gear Lubricant, SAE 75W-90

A static electrical charge can accumulate when this material is flowing through pipes, nozzles or filters and when it is agitated.

Storage Keep container tightly closed. Store in a cool, dry, well-ventilated area. Store only in approved containers. Do not store with strong oxidizing agents. Do not store at elevated temperatures. Avoid storing product in direct sunlight for extended periods of time. Storage area must meet OSHA requirements and applicable fire codes. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers or waste residues of this product.

## SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Engineering Controls** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). An eye wash station and safety shower should be located near the work-station.

**Personal Protective Equipment** Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.



Eye Protection	Safety glasses equipped with side shields are recommended as minimum protection in
	industrial settings. Wear goggles if splashing or spraying is anticipated. Wear goggles and
	face shield if material is heated above 125°F (51°C). Have suitable eye wash water
	available.

**Hand Protection** None required for incidental contact. Use gloves constructed of chemical resistant materials such as heavy nitrile rubber if frequent or prolonged contact is expected. Use heat-protective gloves when handling product at elevated temperatures.

**Body Protection** Use clean protective clothing if splashing or spraying conditions are present. Protective clothing may include long-sleeve outer garment, apron, or lab coat. If significant contact occurs, remove oil-contaminated clothing as soon as possible and promptly shower. Launder contaminated clothing before reuse or discard. Wear heat protective boots and protective clothing when handling material at elevated temperatures.

**Respiratory Protection** The need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).

**General Comments** Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents or harsh abrasives as skin cleaners. Since specific exposure standards/control limits have not been established for this product, the "Oil Mist, Mineral" exposure limits shown below are suggested as minimum control guidelines.

#### **Occupational Exposure Guidelines**

Substance	Applicable Workplace Exposure Levels
Oil, Mineral (Mist)	ACGIH (United States). TWA: 5 mg/m ³ 8 hour(s). STEL: 10 mg/m ³ 15 minute(s). OSHA (United States). TWA: 5 mg/m ³ 8 hour(s).

MSDS No. 631809001

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (TYPICAL)

Physical State	Liquid.	Color	Amber.		Odor	Mild.
Specific Gravity	0.856 (Water = 1)	рН	Not applica	able	Vapor Density	>1 (Air = 1)
Boiling Range	Not available.			Melting Point	/Freezing	Not available.
Vapor Pressure	<0.01 kPa (<0.1 mm Hg) (at 20°C)			Volatility		Negligible volatility.
Solubility in Water	Negligible solubility in cold water.		Viscosi (cSt @		120	
Flash Point	Open cup: 204°C (399°F) (Cleveland.).					
Additional Properties	Gravity, ºAPI (ASTM D287) = 33.4 @ 60º F Density = 7.14 Lbs/gal.					

## SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable.	Hazardous Polymerization Not expected to occur.
Conditions to Avoid	Keep away from extreme he	eat, sparks, open flame, and strongly oxidizing conditions.
Materials Incompatibility	Oxidizing materials.	
Hazardous Decomposition Products	No additional hazardous de products identified in Sectio	composition products were identified other than the combustion n 5 of this MSDS.

## SECTION 11. TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

**Toxicity Data** See Section 3 for health information.

## **SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity** Analysis for ecological effects has not been conducted on this product. However, if spilled, this product and any contaminated soil or water may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl.

Environmental Fate Inherently biodegradable

## **SECTION 13. DISPOSAL CONSIDERATIONS**

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

## CITGO Synthetic Gear Lubricant, SAE 75W-90

Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a "hazardous waste" at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact your regional US EPA office for guidance concerning case specific disposal issues. Empty drums and pails retain residue. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose this product's empty container to heat, flame, or other ignition sources. DO NOT attempt to clean it. Empty drums and pails should be drained completely, properly bunged or sealed, and promptly sent to a reconditioner.

## SECTION 14. TRANSPORT INFORMATION

The shipping description below may not represent requirements for all modes of transportation, shipping methods or locations outside of the United States.					
US DOT Status	Not regulated by the U.S. Department of Transportation as a hazardous material.				
Proper Shipping Name	Not regulated.				
Hazard Class	Not regulated.	Packing Group	Not applicable.		
		UN/NA Number	Not regulated.		
Reportable Quantity	A Reportable Quantity (RQ) has not been established for this material.				
Placard(s)		Emergency Response Guide No.	Not applicable.		
		MARPOL III Status	Not a DOT "Marine Pollutant" per 49 CFR 171.8.		

## **SECTION 15. REGULATORY INFORMATION**

TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
SARA 302/304 Emergency Planning and Notification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.
SARA 311/312 Hazard Identification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories: No SARA 311/312 hazard categories identified.
SARA 313 Toxic Chemical Notification and Release Reporting	This product contains the following components in concentrations above <i>de minimis</i> levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No components were identified.
CERCLA	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. This product or refinery stream is not known to contain chemical substances subject to this statute. However, it is recommended that you

### CITGO Synthetic Gear Lubricant, SAE 75W-90

	contact state and local authorities to determine if there are any other reporting requirements in the event of a spill.
Clean Water Act (CWA)	This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.
California Proposition 65	This product is not known to contain any components for which the State of California has found to cause cancer, birth defects or other reproductive harm.
New Jersey Right-to-Know Label	For New Jersey R-T-K labeling requirements, refer to components listed in Section 2.
Additional Remarks	No additional regulatory remarks.

## **SECTION 16. OTHER INFORMATION**

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION					
Version Number	4.1				
<b>Revision Date</b>	1/4/2013				
ABBREVIATIONS					
AP: Approximately	EQ: Equal	>: Greater Than	<: Less Than		
NA: Not Applicable	ND: No Data	NE: Not Established			
ACGIH: American Conference of Governmental Industrial Hygienists					
AIHA: American Industrial Hygiene Association					
IARC: International Agency for Research on Cancer					
NIOSH: National Institute of Occupational Safety and Health					
NPCA: National Paint and Coating Manufacturers Association					
EPA: US Environmental Protection Agency					
HMIS: Hazardous Materials Information System					
OSHA: Occupational Safety and Health Administration NTP: National Toxicology Program					
NFPA: National Fire Protection Association					

#### DISCLAIMER OF LIABILITY

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THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.





SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

## Chevron Tegra® Synthetic Compressor Oil ISO 32, 68, 100

Product Use: Compressor Oil Product Number(s): CPS259128, CPS259129, CPS259130 Synonyms: Chevron Tegra® Synthetic Compressor Oil ISO 100, Chevron Tegra® Synthetic Compressor Oil ISO 150, Chevron Tegra® Synthetic Compressor Oil ISO 32, Chevron Tegra® Synthetic Compressor Oil ISO 68 Company Identification Chevron Products Company a division of Chevron U.S.A. Inc. 6001 Bollinger Canyon Rd. San Ramon, CA 94583 United States of America www.chevronlubricants.com

#### Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887 Health Emergency Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623 Product Information email : lubemsds@chevron.com Product Information: (800) LUBE TEK MSDS Requests: (800) 414-6737

#### SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

This material contains no ingredients requiring disclosure under the regulatory criteria for this jurisdiction.

#### SECTION 3 HAZARDS IDENTIFICATION

#### IMMEDIATE HEALTH EFFECTS

Eve: Not expected to cause prolonged or significant eve irritation.

**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

**Inhalation:** Not expected to be harmful if inhaled. Contains a synthetic hydrocarbon oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and

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Chevron Tegra® Synthetic Compressor Oil ISO 32, 68, 100 MSDS: 6724 difficulty breathing.

#### SECTION 4 FIRST AID MEASURES

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

**Skin**: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

**Note to Physicians:** In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

#### SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

#### FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

#### FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 230 °C (446 °F) (Min)

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

#### **PROTECTION OF FIRE FIGHTERS:**

**Fire Fighting Instructions:** This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

#### SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable

Chevron Tegra® Synthetic Compressor Oil ISO 32, 68, 100 MSDS: 6724 regulations.

**Reporting:** Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

#### SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:** DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

**Static Hazard**: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

#### SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

#### **GENERAL CONSIDERATIONS:**

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Special note: Do not use in breathing air apparatus or medical equipment.

#### ENGINEERING CONTROLS:

Use in a well-ventilated area.

#### PERSONAL PROTECTIVE EQUIPMENT

**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Nitrile Rubber, Silver Shield, Viton. **Respiratory Protection:** No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Consult local authorities for appropriate values.

Chevron Tegra® Synthetic Compressor Oil ISO 32, 68, 100 MSDS : 6724

#### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless Physical State: Liquid Odor: Hydrocarbon odor pH: Not Applicable Vapor Pressure: <0.1 mmHg Maximum @ 100 °C (212 °F) Vapor Density (Air = 1): >1 Minimum Boiling Point: >260°C (500°F) Solubility: Soluble in hydrocarbons; insoluble in water Freezing Point: Not Applicable Specific Gravity: 0.83 - 0.85 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) Density: 0.8343 kg/l @ 15.6°C (60.1°F) (Min) Viscosity: 28.8 cSt @ 40°C (104°F) (Min) Evaporation Rate: No data available

#### SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

#### SECTION 11 TOXICOLOGICAL INFORMATION

#### IMMEDIATE HEALTH EFFECTS

**Eye Irritation:** The eye irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: No product toxicology data available.

**Acute Dermal Toxicity:** The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

#### SECTION 12 ECOLOGICAL INFORMATION

#### ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

#### ENVIRONMENTAL FATE

**Ready Biodegradability:** This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

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Chevron Tegra® Synthetic Compressor Oil ISO 32, 68, 100 MSDS: 6724

#### SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

#### SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR Additional Information: NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

#### SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1.	Immediate (Acute) Health Effects:	NO
	2.	Delayed (Chronic) Health Effects:	NO

- 2. Delayed (Chronic) Health Effects:
- 3. Fire Hazard:
- Sudden Release of Pressure Hazard: 4 NO NO
- 5. Reactivity Hazard:

#### **REGULATORY LISTS SEARCHED:**

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
Ū	07=PA RTK

No components of this material were found on the regulatory lists above.

#### CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

#### **NEW JERSEY RTK CLASSIFICATION:**

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Lubricating oil)

#### WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products

**Revision Number: 8** Revision Date: DECEMBER 02, 2010 1 of ##NUMPAGES##

Chevron Tegra® Synthetic Compressor Oil ISO 32, 68, 100 MSDS: 6724

NO

Regulations.

SECTION 16 OTHER INFORMATION	·	· · · · · · · · · · · · · · · · · · ·	
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NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

#### LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1

**REVISION STATEMENT:** This revision updates the following sections of this Material Safety Data Sheet: 14,16 **Revision Date:** DECEMBER 02, 2010

#### ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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Chevron Tegra® Synthetic Compressor Oil ISO 32, 68, 100 MSDS : 6724



_____ "SUVA"-134a Revised 31-May-11 Printed 05/31/2011 CEFS134A _____ Substance ID :13000000349 _____ CHEMICAL PRODUCT/COMPANY IDENTIFICATION _____ Material Identification Corporate MSDS Number : DU000693 CAS Number : 811-97-2 Formula : CH2FCF3 : 1,1,1,2-TETRAFLUOROETHANE CAS Name Product Use Refrigerant Tradenames and Synonyms TETRAFLUOROETHANE 1,1,1,2-TETRAFLUOROETHANE Refrigerant "SUVA" 134a Refrigerant "SUVA" is a registered trademark of E.I. du Pont de Nemours and Company, and its affiliates. E.I. du Pont Canada Company is a licensee. Company Identification MANUFACTURER/DISTRIBUTOR E.I. du Pont Canada Company P.O. Box 2200 Streetsville Mississauga, Ontario L5M 2H3 PHONE NUMBERS Product Information : 1-800-387-2122 Medical Emergency : 1-800-441-3637 (24 hours) _____ COMPOSITION/INFORMATION ON INGREDIENTS _____ Components Material CAS Number % 811-97-2 100 % ETHANE, 1,1,1,2-TETRAFLUORO-(HFC-134a) _____ HAZARDS IDENTIFICATION _____ Potential Health Effects

#### INHALATION

ETHANE, 1,1,1,2-TETRAFLUORO-Gross overexposure may cause: Central nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness. Irregular heart beat with a strange sensation in the chest, "heart thumping", apprehension, lightheadedness, feeling of fainting, dizziness, weakness, sometimes progressing to loss of consciousness and death. Suffocation, if air is displaced by vapors. SKIN CONTACT ETHANE, 1,1,1,2-TETRAFLUORO-Immediate effects of overexposure may include: Frostbite, if liquid or escaping vapor contacts the skin. EYE CONTACT ETHANE, 1,1,1,2-TETRAFLUORO-"Frostbite-like" effects may occur if the liquid or escaping vapors contact the eyes. ADDITIONAL HEALTH EFFECTS ETHANE, 1,1,1,2-TETRAFLUORO-Increased susceptibility to the effects of this material may be observed in persons with pre-existing disease of the: central nervous system, cardiovascular system. Carcinogenicity Information None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen. _____ FIRST AID MEASURES _____ First Aid

INHALATION

If high concentrations are inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

In case of contact, immediately flush skin with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before

reuse. Treat for frostbite if necessary by gently warming affected area. EYE CONTACT In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. INGESTION Ingestion is not considered a potential route of exposure. Notes to Physicians Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should only be used with special caution in situations of emergency life support. _____ FIRE FIGHTING MEASURES _____ Flammable Properties Flash Point : No flash point Flammable Limits in Air, % by Volume: : None per ASTM E681 LEL : None per ASTM E681 UEL : >743 C(>1369 F) Autoignition Fire and Explosion Hazards: Cylinders may rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and color of torch flames. This flame effect will only occur in concentrations of product well above the recommended exposure limit, therefore stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames. HFC-134a is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of HFC-134a with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. HFC-134a can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing HFC-134a and air, or HFC-134a in

an oxygen enriched atmosphere become combustible depends on

the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, HFC-134a should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example HFC-134a should NOT be mixed with air under pressure for leak testing or other purposes.

Experimental data have also been reported which indicate combustibility of HFC-134a in the presence of certain concentrations of chlorine.

Extinguishing Media

Use media appropriate for surrounding material.

Fire Fighting Instructions

Cool tank/container with water spray. Self-contained breathing apparatus (SCBA) may be required if cylinders rupture or release under fire conditions.

Water runoff should be contained and neutralized prior to release.

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ACCIDENTAL RELEASE MEASURES

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Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Ventilate area, especially low or enclosed places where heavy vapors might collect. Remove open flames. Use self-contained breathing apparatus (SCBA) if large spill or leak occurs.

_____

HANDLING AND STORAGE

Handling (Personnel)

Use with sufficient ventilation to keep employee exposure below recommended limits.

Handling (Physical Aspects)

HFC-134a should not be mixed with air for leak testing or used for any other purpose above atmospheric pressure. See Flammable Properties section. Contact with chlorine or other strong oxidizing agents should also be avoided.

#### Storage

Store in a clean, dry place. Do not heat above 52 C (126 F).

Valve protection caps and valve cutlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do NOT drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Never attempt to lift cylinder by its cap. Use a pressure reducing regulator when connecting cylinder to lower pressure (>3000 psig) piping or systems. Do NOT heat cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Separate full containers from empty containers. Storage area temperatures should not exceed 125 deg F (52 deg C) and should be free of combustible materials. Avoid area where salt or other corrosive materials are present. Avoid excessive inventory and storage time. Use a first-in first-out system. Keep accurate inventory records.

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EXPOSURE CONTROLS/PERSONAL PROTECTION
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Engineering Controls

Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places. Refrigerant concentration monitors may be necessary to determine vapor concentrations in work areas prior to use of torches or other open flames, or if employees are entering enclosed areas.

Personal Protective Equipment

Impervious gloves and chemical splash goggles should be used when handling liquid.

Under normal manufacturing conditions, no respiratory protection is required when using this product.

Self-contained breathing apparatus (SCBA) is required if a large release occurs.

# Exposure Guidelines

Exposure Limits	
"SUVA"-134a	
PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
AEL * (DuPont)	: 1000 ppm, 8 & 12 Hr. TWA

Physical Data

Odor

Form Color

Stable.

Zn, Be, etc.

Decomposition

## **Du Pont Material Safety Data Sheet**

WEEL (AIHA) : 1000 ppm, 8 Hr. TWA * AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence. _____ PHYSICAL AND CHEMICAL PROPERTIES _____ 

 Boiling Point
 : -26.5 C (-15.7 F) @ 736 mm Hg

 Vapor Pressure
 : 96 psia @ 25 C (77 F)

 Vapor Density
 : 3.6 (Air=1.0) @ 25 C (77 F)

 % Volatiles
 : 100 WT%

 % Volatiles : 100 WT% Solubility in Water  $\hfill :$  0.15 WT% @ 25 C (77 F) @ 14.7 psia : Ether (slight). : Liquified Gas. : Colorless. 

 Liquid Density
 : 1.21 g/cm3 @ 25 C (77 F)

 Specific Gravity
 : 1.208 @ 77 F (25 C)

 Evaporation Rate : (CCL4 = 1); greater than 1 _____ STABILITY AND REACTIVITY _____ Chemical Stability Conditions to Avoid Avoid open flames and high temperatures. Incompatibility with Other Materials Incompatible with alkali or alkaline earth metals - powdered Al, Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl

These materials are toxic and irritating. Contact should be avoided.

Polymerization

fluoride.

Polymerization will not occur.

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TOXICOLOGICAL INFORMATION

Animal Data

ETHANE, 1,1,1,2-TETRAFLUORO-

EYE:

A short duration spray of vapor produced very slight eye irritation.

SKIN:

Animal testing indicates this material is a slight skin irritant, but not a skin sensitizer.

INHALATION:

4 hour, ALC, rat: 567,000 ppm.

Single exposure caused: Cardiac sensitization, a potentially fatal disturbance of heart rhythm associated with a heightened sensitivity to the action of epinephrine. Lowest-Observed-Adverse-Effect-Level for cardiac sensitization: 75,000 ppm. Single exposure caused: Lethargy. Narcosis. Increased respiratory rates. These effects were temporary. Single exposure to near lethal doses caused: Pulmonary edema. Repeated exposure caused: Increased adrenals, liver, spleen weight. Decreased uterine, prostate weight. Repeated dosing of higher concentrations caused: the following temporary effects -Tremors. Incoordination.

CARCINOGENIC, DEVELOPMENTAL, REPRODUCTIVE, MUTAGENIC EFFECTS:

In a two-year inhalation study, HFC-134a, at a concentration of 50,000 ppm, produced an increase in late-occurring benign testicular tumors, testicular hyperplasia and testicular weight. The no-effect-level for this study was 10,000 ppm. Animal data show slight fetotoxicity but only at exposure levels producing other toxic effects in the adult animal. Reproductive data on male mice show: No change in reproductive performance. Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures, or in animals. In animal testing, this material has not caused permanent genetic damage in reproductive cells of mammals (has not produced heritable genetic damage).

ECOLOGICAL INFORMATION

Ecotoxicological Information

48 hour EC50 - Daphnia magna: 980 mg/L. 96 hour LC50 - Rainbow trout: 450 mg/L _____ _____ Contaminated HFC-134a can be recovered by distillation or removed to a permitted waste disposal facility. Comply with Federal, _____ _____ Proper Shipping Name : 1,1,1,2-TETRAFLUOROETHANE DOT/IMO Label : NONFLAMMABLE GAS

Shipping Containers

Hazard Class

TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO

UN No.

AQUATIC TOXICITY:

DISPOSAL CONSIDERATIONS

State, and local regulations.

Waste Disposal

Tank Cars. Tank Trucks. Ton Tanks. Cylinders.

Shipping Information -- Canada

#### TDG Proper Shipping Name : 1, 1, 1, 2-TETRAFLUOROETHANE TDG Class : 2.2 UN # : 3159

: 2.2

: 3159

_____

REGULATORY INFORMATION

_____ U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes Chronic : Yes Fire : No Reactivity : No

: No

WHMIS Classification: CLASS A Compressed Gas This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR. CEPA Status : DSL: REPORTED/INCLUDED. OTHER INFORMATION

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NFPA, NPCA-HMIS

Pressure : Yes

HAZARDOUS CHEMICAL LISTS

SARA Toxic Chemical

Canadian Regulations

SARA Extremely Hazardous Substance: No CERCLA Hazardous Substance : No

NPCA-HMIS Rating		
Health	:	1
Flammability	:	0
Reactivity	:	1

Personal Protection rating to be supplied by user depending on use conditions.

Additional Information

MEDICAL USE: CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont CAUTION Bulletin No. H-50102.

_____

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS

FLUOROPRODUCTS E.I. E.I. du Pont Canada Company Company Box 2200, Streetsville Mississauga, Ontario, L5M 2H3 (905) 821-3300.

# Indicates updated section.

(Continued)

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End of MSDS

MSDS NO. 10185

Trade Name: THREAD BOND Z

Revision Date: 09/16/2003

#### CHEMICAL PRODUCT AND COMPANY IDENTIFICATION 1.

Trade Name: Chemical Family: Product Use: Emergency Telephone (24 hr.	THREAD BOND Z Mixture Drill Pipe Thread Lubrica .): 281-561-1600	ant.	
Supplied by:	M-I HDD MINING & WA A Business Unit of M-I L A Smith/Schlumberger C P.O. Box 42842 Houston, TX 77242	L.C.	
Telephone Number: Contact Person:	281-561-1511 Catherine Miller, Produc	t Safety	
Revision Number:	3		
HMIS Rating Health: 1	Flammability: 1	Physical Hazard: 0	PPE: E

HMIS Key: 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

#### **COMPOSITION/INFORMATION ON INGREDIENTS** 2.

Ingredient	CAS NO:	<b>W</b> t. %	Ingredient Comments:
Zinc	7440-66-6	40 - 60	No comments.
Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	40 - 60	No comments.
Talc	14807-96-6	5 - 10	No comments.
Fatty acid compound		5 - 10	No comments.
Aluminum compound		5 - 10	No comments.

#### **HAZARDS IDENTIFICATION** 3.

**Emergency Overview:** 

**Canadian WHMIS:** 

Caution! May cause eye, skin and respiratory tract irritation.

UN PIN No:	Not regulated		WHMIS Class:	D2B	
Physical Gel State:		Odor:	Petroleum	Color:	Grey
Potential Health	effects:				
Acute Effects					
Eye Contact:May irritate eyes.Skin Contact:May be irritating to the skin.Prolonged or repeated contact may cause defatting of the skin and/or dermatitis (inflamation).					
Inhalation Ingestion:	:	Vapors or mists may be irritating to the respiratory tract. May cause gastric distress, nausea and vomiting if ingested.			

**MSDS NO.** 10185

Trade Name: THREAD BOND Z Revision Date: 09/16/2003

Carcinogenicity & Chronic Effects:	IARC: Not Listed; OSHA: Not regulated; NTP: Not listed.
Routes of Exposure: Target Organs: Medical Conditions Aggravated By Over Exposure:	Eyes. Dermal (skin) contact. Inhalation. Eyes. Skin. Respiratory System. Skin. Respiratory.

	4. FIRST AID MEASURES
Eye Contact:	Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
General Notes:	Persons seeking medical attention should carry a copy of this MSDS with them.
	5. FIRE FIGHTING MEASURES

## Flammable Properties

Flash Point: F (C):	>430F (221C)
Flash Point Method:	COC

Flammable Limits in Air - Lower Flammable Limits in Air - Upper	
Autoignition Temperature: F(C)	>500F (260C)
Flammability Class:	IIIB
Other Flammable Properties:	ND
Extinguishing Media:	Water fog, carbon dioxide, foam, dry chemical.

#### Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Oxides of: Carbon. Metal fumes.

6.	ACCIDENTAL RELEASE MEASURES
Personal Precautions:	Use personal protective equipment identified in Section 8.
Spill Procedures:	Evacuate surrounding area, if necessary. Keep personnel removed and upwind of spill. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Shut off leak if it can be done safely. Contain spilled material. Absorb in vermiculite, dry sand or earth. Place into containers for disposal.
Environmental Precautions:	Do not allow to enter sewer or surface and subsurface waters. Waste must be disposed of in accordance with federal, state and local laws. In the U.S., for products with reportable quanitity (RQ) components - if the RQ is exceeded, report to National Spill Response Office at 1 800 424 8802.

## Trade Name: THREAD BOND Z

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Handling:

## 7. HANDLING AND STORAGE

Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid breathing vapors or spray mists. Use only in a well ventilated area. Wash thoroughly after handling.

Storage:

Store in dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Limits (TLV & PEL are 8H TWA):

Ingredient	CAS NO:	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Zinc	7440-66-6	40 - 60	NA	NA		None
Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	40 - 60	NA	NA		(3) Oil mist.
Talc	14807-96-6	5 - 10	2 mg/m ³	see Table Z-3		(7)
Fatty acid compound		5 - 10	NA	NA		None
Aluminum compound		5 - 10	NA	NA		None

#### Notes

(3) For Oil mist, mineral: ACGIH TLV 5 mg/m³, STEL 10 mg/m³; OSHA PEL 5 mg/m³

 Table Z-3: PEL for Mineral Dusts containing crystalline silica are 10 mg/m³ / (%SiO2+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite.

(7) Respirable fraction. The value is for particulate matter containing no asbestos and <1% crystalline silica.

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

#### Personal Protection Equipment

Eye/Face Protection:	Wear chemical safety goggles.			
Skin Protection:	Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as nitrile or neoprene.			
Respiratory Protection:	If exposed to particulates/aerosols: Use at least a NIOSH-approved N95 half-mask disposable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator. If exposed to organic vapors: Use a NIOSH/MSHA-approved organic vapor respirator. CCROV: CCR with organic vapor cartridge. Refer to Exposure Limits table (Section 8) for component specific respiratory			
General Hygiene	Work clothes should be washed separately at the end of each work day.			
General Hygiene Considerations:	<ul> <li>P95 half-mask disposable or reuseable particulate respirator.</li> <li>If exposed to organic vapors:</li> <li>Use a NIOSH/MSHA-approved organic vapor respirator. CCROV: CCR worganic vapor cartridge.</li> <li>Refer to Exposure Limits table (Section 8) for component specific respirate protection recommendations.</li> </ul>			

	9.	PHYSICAL AND CHEMICAL PROPERTIES
Color:		Grey
Odor:		Petroleum
Physical State:		Gel
pH:		Neutral
Vapor Pressure:		<0.01 kPa at 68F (20C)
Vapor Density (Air=1):		>5

MSDS NO. 10185

Flash Point: F (C): Boiling Point: Melting/Freezing Point: Solubility (Water): Specific Gravity (H2O = 1): Evaporation Rate: Odor Threshold(s): Trade Name: THREAD BOND Z Revision Date: 09/16/2003

>430F (221C) <600F (316C) 385F (196C) Insoluble 1.78 g/cc at 77F (25C) <0.01 (Butyl acetate) ND

## **10. STABILITY AND REACTIVITY**

Chemical Stability: Conditions to Avoid: Materials to Avoid: Hazardous Decomposition Products: Hazardous Polymerization: Stable Keep away from heat, sparks and flame. Contact with oxidizing agents. None known

Will not occur

## **11. TOXICOLOGICAL INFORMATION**

#### Component Toxicological Data

Ingredient	CAS NO:	Acute Data
Mineral oil, petroleum distillates,	64742-52-5	Oral LD50: >5 g/kg (rat); Dermal LD50: >5 g/kg
hydrotreated (severe) heavy naphthenic		(rabbit)

Ingredient	Component Toxicological Summary
Talc	Long term inhalation of talc dust may produce talcosis or talc pneumoconiosis. Both are
	lung disorders that may result in restricted breathing.

#### **Product Toxicological Information:**

No toxicological data is available for this product.

## **12. ECOLOGICAL INFORMATION**

 Product Ecotoxicity Data:
 Contact M-I Environmental Affairs Department for available product ecotoxicity data.

 Biodegration:
 ND

 Bioaccumulation:
 ND

 Octanol/Water Partition
 ND

 Coefficient:
 ND

	13. DISPOSAL CONSIDERATIONS
Waste Classification:	ND
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

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Trade Name: THREAD BOND Z Revision Date: 09/16/2003

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## 14. TRANSPORT INFORMATION

U.S. DOT Shipping Description:	Not regulated
Product RQ:	134 gal (zinc)
TDG (Canada): Shipping Description: UN PIN No:	Not regulated Not regulated
IMDG: Shipping Description:	Not regulated
ICAO/IATA: Shipping Description:	Not regulated

## **15. REGULATORY INFORMATION**

U.S. Federal and State Regulations

SARA 311/312 Hazard<br/>Catagories:Immediate (acute) health hazard.SARA 302/304, 313; CERCLA<br/>RQ, California Proposition 65:Note: If no components are listed below, this product is not subject to the<br/>referenced SARA and CERCLA regulations and is not known to contain a<br/>Proposition 65 listed chemical at a level that is expected to pose a significant risk<br/>under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro, F	CA 65 Repro, M
Zinc		1.0%	1000 lb (454 kg)				

#### International Chemical Inventories

Australia AICS - Components are listed or exempt from listing.

Canada DSL - Components are listed or exempt from listing.

European EINECS - Components are listed or exempt from listing.

U.S. TSCA - Components are listed or exempt from listing.

U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

#### Canadian WHMIS:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: D2B

## **16. OTHER INFORMATION**

The following sections have been revised: 15,

NA - Not Applicable, ND - Not Determined.

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## Trade Name: THREAD BOND Z

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#### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

## Safety Data Sheet



Revision Number: 008.0

1. PRODUCT AND COMPANY IDENTIFICATION

#### Product name:

 Restriction of Use:
 Anaer

 Company address:
 Henkel Corporation

 One Henkel Way
 Rocky Hill, Connecticut 06067

Loctite® Threadlocker Blue 242 Removable Anaerobic Sealant None identified IDH number:

209728

Item number:24200Region:United StatesContact information:Telephone:(860) 571-5100MEDICAL EMERGENCY Phone:Poison Control Center1-877-671-4608 (toll free) or1-303-592-1711TRANSPORT EMERGENCY Phone:CHEMTREC1-800-424-9300 (toll free) or1-703-527-3887Internet:www.henkelna.com

## 2. HAZARDS IDENTIFICATION

## WARNING:

EMERGENCY OVERVIEW CAUSES SKIN AND EYE IRRITATION. MAY CAUSE AN ALLERGIC SKIN REACTION.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2B
SKIN SENSITIZATION	1



#### **Precautionary Statements**

Prevention:	Avoid breathing vapors, mist, or spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves.
Response:	IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. If skin irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.
Storage:	Not prescribed
Disposal:	Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS		
Hazardous Component(s) CAS Number Percentage*		
Polyglycol dimethacrylate	Proprietary	60 - 100

Polyglycol oleate	Proprietary	10 - 30
Saccharin	81-07-2	1 - 5
Silica, amorphous, fumed, crystal-free	112945-52-5	1 - 5
Cumene hydroperoxide	80-15-9	1 - 5
Propane-1,2-diol	57-55-6	1 - 5
Cumene	98-82-8	0.1 - 1

* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4	. FIRST AID MEASURES
Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact:	Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Wash clothing before reuse. Get mediattention.
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 1 minutes. Get medical attention.
Ingestion:	DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
Symptoms:	See Section 11.
5. I	FIRE FIGHTING MEASURES
Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such a turn-out gear. In case of fire, keep containers cool with water spray.
Unusual fire or explosion hazards:	Uncontrolled polymerization may occur at high temperatures resulting in explosions or rupture of storage containers.
Hazardous combustion products:	Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours.

## 6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Do not allow product to enter sewer or waterways.
Clean-up methods:	Remove all sources of ignition. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean- up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

#### 7. HANDLING AND STORAGE

Handling:

Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container closed. Refer to Section 8.

Storage:

For safe storage, store between 0 °C ( $32^{\circ}F$ ) and  $32^{\circ}C$  ( $89.6^{\circ}F$ ) Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyglycol dimethacrylate	None	None	None	None
Polyglycol oleate	None	None	None	None
Saccharin	None	None	None	None
Silica, amorphous, fumed, crystal-free	10 mg/m3 TWA Inhalable dust. 3 mg/m3 TWA Respirable fraction.	20 MPPCF TWA 0.8 mg/m3 TWA	None	None
Cumene hydroperoxide	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None
Propane-1,2-diol	None	None	10 mg/m3 TWA Aerosol	None
Cumene 50 ppm TWA		50 ppm (245 mg/m3) PEL (SKIN)	None	None

**Engineering controls:** 

**Respiratory protection:** 

Eye/face protection:

Skin protection:

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.

Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact. Neoprene gloves. Butyl rubber gloves. Natural rubber gloves.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Liquid Blue

Physical state: Color: Odor: Odor threshold: pH: Vapor pressure: Boiling point/range: Melting point/ range: Specific gravity: Vapor density: Flash point: Flame projection: Flammable/Explosive limits - lower: Flammable/Explosive limits - upper:

Mild Not available. Not applicable  $< 5 \text{ mm hg } (27 \ ^{\circ}C \ (80.6 \ ^{\circ}F))$  $> 149 \ ^{\circ}C \ (> 300.2 \ ^{\circ}F)$ Not available.  $1.1 \ at 23.9 \ ^{\circ}C \ (75.02 \ ^{\circ}F)$ Not available.  $> 93.3 \ ^{\circ}C \ (> 199.94 \ ^{\circ}F)$  Tagliabue closed cup Not applicable  $2.6 \ (\text{propylene glycol})$  Autoignition temperature: Evaporation rate: Solubility in water: Partition coefficient (n-octanol/water): VOC content: Viscosity: Decomposition temperature:

Not determined Not available. Slight Not available. 0.56 %; 6.17 g/l Not available. Not available.

## **10. STABILITY AND REACTIVITY**

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	None under normal processing. Polymerization may occur at elevated temperature or in the presence of incompatible materials.
Hazardous decomposition products:	Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours.
Incompatible materials:	Strong oxidizing agents. Free radical initiators. Strong reducing agents. Alkalis. Oxygen scavengers. Other polymerization initiators. Copper. Iron. Zinc. Aluminum. Rust.
Reactivity:	Not available.
Conditions to avoid:	Elevated temperatures. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials.

#### 11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure:

Skin, Inhalation, Eyes, Ingestion

#### Potential Health Effects/Symptoms

Inhalation:	Inhalation of vapors or mists of the product may be irritating to the respiratory system.
Skin contact:	Causes skin irritation. May cause allergic skin reaction.
Eye contact:	Causes eye irritation.
Ingestion:	May cause gastrointestinal tract irritation if swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects	
Polyglycol dimethacrylate	None	Allergen, Irritant	
Polyglycol oleate	None	Irritant	
Saccharin	None	No Target Organs	
Silica, amorphous, fumed, crystal-free	None	Nuisance dust	
Cumene hydroperoxide	None	Allergen, Central nervous system, Corrosive, Irritant, Mutagen	
Propane-1,2-diol	Oral LD50 (RABBIT) = 18 g/kg Oral LD50 (RAT) = 30 g/kg	Irritant	
Cumene	Oral LD50 (RAT) = 2.91 g/kg Oral LD50 (RAT) = 1,400 mg/kg Inhalation LC50 (RAT, 4 h) = 8000 ppm	Central nervous system, Irritant, Lung	

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyglycol dimethacrylate	No	No	No
Polyglycol oleate	No	No	No
Saccharin	No	No	No
Silica, amorphous, fumed, crystal-free	No	No	No
Cumene hydroperoxide	No	No	No
Propane-1,2-diol	No	No	No
Cumene	No	Group 2B	No

#### 12. ECOLOGICAL INFORMATION

Ecological information:

Not available.

#### **13. DISPOSAL CONSIDERATIONS**

Information provided is for unused product only.

Recommended method of disposal:

Hazardous waste number:

Follow all local, state, federal and provincial regulations for disposal.

Not a RCRA hazardous waste.

#### **14. TRANSPORT INFORMATION**

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

9 CFR)
Not regulated
None
None
None
Not regulated
None
None
None
Not regulated
None
None
None

#### **15. REGULATORY INFORMATION**

#### **United States Regulatory Information**

TSCA 8 (b) Inventory Status: TSCA 12 (b) Export Notification:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory. None above reporting de minimis
CERCLA/SARA Section 302 EHS: CERCLA/SARA Section 311/312: CERCLA/SARA Section 313:	None above reporting de minimis Immediate Health, Delayed Health This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Saccharin (CAS# 81-07-2). Cumene hydroperoxide (CAS# 80-15-9).
CERCLA Reportable quantity:	Cumene hydroperoxide (CAS# 80-15-9) 10 lbs. (4.54 kg)
California Proposition 65:	This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
Canada Regulatory Information	
CEPA DSL/NDSL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

#### **16. OTHER INFORMATION**

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

#### Prepared by: Sheila Gines, Regulatory Affairs Specialist

**Issue date:** 08/21/2014

**DISCLAIMER:** The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

## Safety Data Sheet



Revision Number: 005.0

1. PRODUCT AND COMPANY IDENTIFICATION

#### Product name:

Product type:AnaerRestriction of Use:NoneCompany address:Henkel CorporationOne Henkel WayRocky Hill, Connecticut 06067

LOCTITE® 277™ THREADLOCKER HIGH STRENGTH Anaerobic Sealant None identified IDH number:

88448

Item number:27731Region:United StatesContact information:Telephone:(860) 571-5100MEDICAL EMERGENCY Phone:Poison Control Center1-877-671-4608 (toll free) or1-303-592-1711TRANSPORT EMERGENCY Phone:CHEMTREC1-800-424-9300 (toll free) or1-703-527-3887Internet:www.henkelna.com

#### 2. HAZARDS IDENTIFICATION

# EMERGENCY OVERVIEW WARNING: CAUSES SKIN IRRITATION. MAY CAUSE AN ALLERGIC SKIN REACTION. CAUSES SERIOUS EYE IRRITATION.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
SKIN SENSITIZATION	1



#### **Precautionary Statements**

Prevention:	Avoid breathing vapors, mist, or spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear eye and face protection. Wear protective gloves.
Response:	F ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. If skin irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.
Storage:	Not prescribed
Disposal:	Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Polyglycol dimethacrylate	Proprietary	30 - 60
Cumene hydroperoxide	80-15-9	1 - 5
Saccharin	81-07-2	1 - 5
Cumene	98-82-8	0.1 - 1

* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4	I. FIRST AID MEASURES
Inhalation:	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Skin contact:	Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Wash clothing before reuse. Get medi- attention.
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 1 minutes. Get medical attention.
Ingestion:	DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
Symptoms:	See Section 11.
5.	FIRE FIGHTING MEASURES
Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such a turn-out gear. In case of fire, keep containers cool with water spray.
Unusual fire or explosion hazards:	Uncontrolled polymerization may occur at high temperatures resulting in explosions or rupture of storage containers.
Hazardous combustion products:	Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours.

## 6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Do not allow product to enter sewer or waterways.
Clean-up methods:	Remove all sources of ignition. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean- up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

## 7. HANDLING AND STORAGE

Handling:

Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container closed. Refer to Section 8.

Storage:

For safe storage, store at or below 38  $^{\circ}$ C (100.4  $^{\circ}$ F) Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyglycol dimethacrylate	None	None	None	None
Cumene hydroperoxide	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None
Saccharin	None	None	None	None
Cumene	50 ppm TWA	50 ppm (245 mg/m3) PEL (SKIN)	None	None
Engineering controls:	Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.			
Respiratory protection:	Use NI limit(s).	OSH approved respirator	if there is potential to ex	ceed exposure
Eye/face protection:		Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.		
Skin protection:	apron o	emical resistant, impermo or body suit to prevent ski Natural rubber gloves.		

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Red
Odor:	Characteristic
Odor threshold:	Not available.
pH:	Not applicable
Vapor pressure:	< 5 mm hg (27 °C (80.6 °F))
Boiling point/range:	> 149 °C (> 300.2 °F)
Melting point/ range:	Not available.
Specific gravity:	1.1
Vapor density:	Not available.
Flash point:	> 93.3 °C (> 199.94 °F) Tagliabue closed cup
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not available.
Evaporation rate:	Not available.
Solubility in water:	Slight
Partition coefficient (n-octanol/water):	Not available.
VOC content:	0.71 %; 7.13 g/l (California SCAQMD Method 316B) (Estimated)
Viscosity:	Not available.
Decomposition temperature:	Not available.

## **10. STABILITY AND REACTIVITY**

Stability	:	Stable under normal conditions of storage and use.		
Hazardo	us reactions:	None under normal processing. Polymerization may occur at elevated temperature or in the presence of incompatible materials.		
Hazardo products	us decomposition s:	Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours. Phenolics.		
Incompa	tible materials:	Strong acids and oxidizing agents. Copper. Rust. Iron. Oxygen scavengers. Strong alkalis. Reducing agents. Other polymerization initiators.		
Reactivit	ty:	Not available.		
Conditio	ns to avoid:	Elevated temperatures. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials.		

## 11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation:	Inhalation of vapors or mists of the product may be irritating to the respiratory system.
Skin contact:	Causes skin irritation. May cause allergic skin reaction.
Eye contact:	Causes serious eye irritation.
Ingestion:	May cause gastrointestinal tract irritation if swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Polyglycol dimethacrylate	None	Allergen, Irritant
Cumene hydroperoxide	None	Allergen, Central nervous system, Corrosive, Irritant, Mutagen
Saccharin	None	No Target Organs
Cumene	Oral LD50 (RAT) = 2.91 g/kg Oral LD50 (RAT) = 1,400 mg/kg Inhalation LC50 (RAT, 4 h) = 8000 ppm	Central nervous system, Irritant, Lung

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyglycol dimethacrylate	No	No	No
Cumene hydroperoxide	No	No	No
Saccharin	No	No	No
Cumene	No	Group 2B	No

## 12. ECOLOGICAL INFORMATION

**Ecological information:** 

Not available.

#### **13. DISPOSAL CONSIDERATIONS** Information provided is for unused product only. Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal. Hazardous waste number: Not a RCRA hazardous waste. 14. TRANSPORT INFORMATION The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration. U.S. Department of Transportation Ground (49 CFR) Proper shipping name: Not regulated Hazard class or division: None Identification number: None Packing group: None International Air Transportation (ICAO/IATA) Proper shipping name: Not regulated Hazard class or division: None Identification number: None Packing group: None Water Transportation (IMO/IMDG) Proper shipping name: Not regulated Hazard class or division: None Identification number: None Packing group: None Additional information: IMDG-Code: Segregation group 1- Acids **15. REGULATORY INFORMATION United States Regulatory Information** TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory. TSCA 12 (b) Export Notification: None above reporting de minimis **CERCLA/SARA Section 302 EHS:** None above reporting de minimis Immediate Health, Delayed Health CERCLA/SARA Section 311/312: **CERCLA/SARA Section 313:** This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Cumene hydroperoxide (CAS# 80-15-9). Saccharin (CAS# 81-07-2). Cumene hydroperoxide (CAS# 80-15-9) 10 lbs. (4.54 kg) **CERCLA Reportable quantity: California Proposition 65:** This product contains a chemical known in the State of California to cause cancer.

#### **Canada Regulatory Information**

CEPA DSL/NDSL Status:

All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

#### **16. OTHER INFORMATION**

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Sheila Gines, Regulatory Affairs Specialist

Issue date: 08/21/2014

**DISCLAIMER:** The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.



**TORKease** is a drilling product from DSC Incorporated, PO Box 9464, The Woodlands, Texas 77387, Phone (281) 932-8290, Fax (603) 584-6058.

EPA Registration Number for this non-hazardous, non-toxic, biodegradable mud additive product is 11281490. Applicable SARA Title III subsections: None established.

<b>NO HAZARDOUS INGREDIENTS</b> : <b>TORKease</b> is a proprietary blend of complex stearates. All components of <b>TORKease</b> are well below the DeMinimis Allowable which EPA has established as non-toxic and non-hazardous.				
Health - Minimal      I	Protective Equipment - Minimal Reactivity - Minimal on permitted under present rules.)			
Appearance (2 forms):         a.       Blue gelatinous liquid emulsion, or         b.       Dry blue granules (Concentrate form)         Specific Gravity:       (H ₂ O=1.0)       .95         Freezing Point (Gel)*:       32°         Melting Point:       125°         Thermal Stability:       500°++         Solubility:       Slightly soluble in fresh water.         Insoluble in salt water.       Sr         Yeroduct is not harmed by freezing; however,       Dr         TORKease Concentrate is recommended for       Dr	ealth Hazard Data: <u>ffects of Exposure</u> : None <u>eak or Spill Procedure</u> : Flush with water. <u>Vaste Disposal</u> : No special precautions. <u>halation</u> : Avoid prolonged exposure in poorly entilated areas. <u>kin or Eye Contact</u> : Avoid direct contact. May itate eyes. <u>rotective Handling Equipment</u> : None special. <u>pecial Precautions</u> : Use normal caution for andling caustic materials. <u>elayed Effects</u> : None established <u>oxic Data</u> : None Established for humans. pproved by EPA under LC ₅₀ tests.			
•Inhalation Reaction:EMERGENCY AND FIRST AID DATA Remove subject to fresh air. Obtain medical attention.•Skin & Eye Contact:Wash affected skin with soap and water. Wash eyes with large amounts of water for 15 minutes and seek medical attention.				
•Ingestion: Product may be harmful if swallowed. Dilute immediately by drinking at least two glasses of water and seek medical attention.				

Revised: April 15, 2010



## MSDS No. 10209 Trade Name: TUBE LUBE Revision Date: 03/09/2012 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name:	TUBE LUBE				
Chemical Family: Product Use:	Mixture Drilling fluid ad	ditive. Lubricant.			
Supplied by:	M-I L.L.C. P.O. Box 4284 Houston, TX 7 www.miswaco.	7242			
Telephone Number:	281-561-1509				
Emergency Telephone (2		0			
Prepared by:	Product Safety	Group			
Revision No.	3				
HMIS Rating Health: 1	Flammability: 1	Physical Hazard: 0	PPE:	J	

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

## 2. HAZARDS IDENTIFICATION

Emergency Overview: Canadian Classification: UN PIN No: Not regulated.		Warning! May cause eye and skin irritation. Prolonged contact may damage eye. May cause skin sensitization, an allergic reaction, on repeated exposure. May cause respiratory tract irritation. WHMIS Class: D2B			
Potential Health Effects: Acute Effects Eye Contact: Skin Contact: Inhalation: Ingestion:		May be irritating to the eyes. Prolonged contact may damage eye. May be irritating to the skin. May cause skin sensitization, an allergic reaction, on repeated exposure. Prolonged or repeated contact may cause defatting of the skin and/or dermatitis (inflammation). Vapors or mists may be irritating to the respiratory tract. Aspiration can be a hazard if this material is swallowed. May cause gastric distress, nausea and vomiting if ingested.			
Carcinogenicity & Chronic Effects: Routes of Exposure: Target Organs/Medical Conditions Aggravated by Overexposure:		See Section 11 - Toxicological Information. Eyes. Dermal (skin) contact. Inhalation. Eyes. Skin. Respiratory System.			

Trade Name: TUBE LUBE

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#### **COMPOSITION/INFORMATION ON INGREDIENTS** 3.

Ingredient	CAS No.	Wt. %	Comments:
Linseed oil	8001-26-1	10 - 30	No comments.

**Composition Comments:** 

Component LD50 and LC50 values are provided in Section 11, if available.

## 4. FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with large amounts of water for at least 15 minutes. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Seek immediate medical attention.
Skin Contact:	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
Inhalation:	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
General notes: Notes To Physician:	Persons seeking medical attention should carry a copy of this MSDS with them. Aspiration may cause severe lung damage. Evacuate stomach in a way which avoids aspiration.

#### **FIRE FIGHTING MEASURES** 5.

#### **Flammable Properties**

Flash Point: F (C): Flammable Limits in Air - Lower (%): Flammable Limits in Air - Upper (%): Autoignition Temperature: F (C): Explosion Data - Sensitivity to Mechanical Impact: Explosion Data - Sensitivity to Static Discharge:	ND ND ND NA If applicable, information is provided in Section 5 Special
Flammability Class: Extinguishing Media:	Fire-Fighting Procedures, Other Flammable Properties and Section 6 Spill Procedures. IIIB Water fog, carbon dioxide, foam, dry chemical.

### **Protection Of Fire-Fighters:**

Special Fire-Fighting Procedures: Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Oxides of: Carbon. Hydrogen gas.

Trade Name: TUBE LUBE

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**Conditions of Flammability:** Products are classified as flammable/combustible based on flash point as defined in the Health Canada Controlled Products Regulations, U.S. Occupational Health and Safety Administration Hazard Communication Standard and transportation regulations. See Sections 1, 2, 5, 14 and 15 for flammable/combustible classification information. Flammable/combustible materials may ignite and burn if exposed to a flame or other sources of ignition.

**Other Flammable Properties:** Rags and other materials soaked with product may heat and ignite if exposed to air. Store wiping rags and similar material in metal cans with tight fitting lids.

## 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:Use personal protective equipment identified in Section 8.Spill Procedures:Evacuate the spill area with the exception of the spill response team. Keep<br/>personnel removed and upwind of spill. Extinguish all ignition sources. Avoid<br/>sparks, flames, heat and smoking. Shut off leak if it can be done safely. Contain<br/>spilled material. Do not allow spilled material to enter sewers, storm drains or<br/>surface waters. Absorb in vermiculite, dry sand or earth. Place into containers for<br/>disposal. Keep combustibles away from spill.Environmental Precautions:Waste must be disposed of in accordance with federal, state and local laws. In the<br/>U.S., for products with reportable quanitity (RQ) components - if the RQ is exceeded,<br/>report to National Spill Response Office at 1 800 424 8802.

## 7. HANDLING AND STORAGE

Handling:Put on appropriate personal protective equipment. Avoid contact with skin and eyes.<br/>Avoid breathing vapors or spray mists. Use only in a well ventilated area. Wash<br/>thoroughly after handling.Storage:Store in dry, well-ventilated area. Keep container closed. Keep away from heat,<br/>sparks and flames. Store away from incompatibles. Follow safe warehousing<br/>practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Linseed oil	8001-26-1	10 - 30	NA	NA	NA	None

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

### Eye/Face Protection:

Wear chemical safety goggles.

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Skin Protection:	Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as nitrile or neoprene.
Beeniretery Protection	All reagizatory protection equipment should be used within a comprehensive

**Respiratory Protection:** All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne mist/aerosol of this product, use at least a NIOSH-approved N95 half-mask disposable or re-usable particulate respirator. In work environments containing oil mist/aerosol, use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

This product is a complex blend of ingredients. If exposed to vapors from this product use a NIOSH/MSHA-approved respirator with a Multi-Contaminant cartridge.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Brown
Odor:	Faint Soap.
Physical State:	Liquid
pH:	9.2 - 11
Specific Gravity (H2O = 1):	ND
Solubility (Water):	Soluble
Flash Point: F (C):	ND
Melting/Freezing Point:	ND
Boiling Point:	212F (100C)
Pour Point:	32F (0C)
Vapor Pressure:	N/D
Vapor Density (Air=1):	N/D
Evaporation Rate:	N/D
Octanol/Water Partition	ND
Coefficient:	
Odor Threshold(s):	ND

## **10. STABILITY AND REACTIVITY**

Chemical Stability: Conditions to Avoid: Materials to Avoid: Conditions of Reactivity: Hazardous Decomposition Products: Hazardous Polymerization

Keep away from heat, sparks and flame. Oxidizers. Combustible materials. Chlorine. Strong acids and bases See Conditions and Materials to Avoid, if applicable. For thermal decomposition products, see Section 5.

Stable but polymerizes gradually upon exposure to air.

## 11. TOXICOLOGICAL INFORMATION

Acute Exposure Effects, Irritation and Sensitization: See Section 2.

Stable

Chronic, Carcinogenicity, Reproductive Toxicity, Teratogenicity, Embryotoxicity, Mutagenicity Effects: See Component Toxicological Summary and Product Toxicological Information, if available. Synergistic Products/Effects: ND

Trade Name: TUBE LUBE Revision Date: 03/09/2012

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**Component Toxicological Data:** Any adverse component toxicological effects and acute toxicity values (LD50s, LC50s) are listed below. If no effects or acute values are listed for components, no such data were identified.

Product Toxicological Information: No toxicological data is available for this product.

## 12. ECOLOGICAL INFORMATION

 Component Ecotoxicity Data:
 Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

 Product Ecotoxicity Data:
 Contact M-I Environmental Affairs Department for available product ecotoxicity data. ND ND

 Bioaccumulation:
 ND

 13. DISPOSAL CONSIDERATIONS

Waste Classification:	ND
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.
Disposal Method:	Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

U.S. DOT Shipping Description:

Canada TDG Shipping Description: UN PIN No: IMDG Shipping Description: ICAO/IATA Shipping Description: Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.

Not regulated. Not regulated. Not regulated. Not regulated.

## **15. REGULATORY INFORMATION**

U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Immediate (acute) health hazard.

SARA 302/304, 313; CERCLA RQ, Note: If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

MATERIAL SAFETY DATA SHEET Trade Name: TUBE LUBE

Revision Date: 03/09/2012

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### **International Chemical Inventories**

Australia AICS - Components are listed or exempt from listing. Canada DSL - Components are listed or exempt from listing. China Inventory - Components are listed or exempt from listing. European Union EINECS/ELINCS - Components are listed or exempt from listing. Japan METI ENCS - Contains a component that is not listed. Korea TCCL ECL - Components are listed or exempt from listing. New Zealand - Components are listed or exempt from listing. Philippine PICCS - Components are listed or exempt from listing. U.S. TSCA - Components are listed or exempt from listing. U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

### **Canadian Classification:**

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: D2B

## **16. OTHER INFORMATION**

The following sections have been revised: 1, 2, 3, 5, 9, 10, 11, 12, 15, 16.

### NA - Not Applicable, ND - Not Determined.

#### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



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# **Material Safety Data Sheet**

## **Chevron Ultra-Duty Grease EP NLGI 2**

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION CHEVRON Ultra-Duty Grease EP NLGI 2 PRODUCT NUMBER(S): CPS238011 COMPANY IDENTIFICATION EMERGENCY TELEPHONE NUMBERS HEALTH (24 hr): (800)231-0623 or Chevron USA Products Company Environmental, Safety, and Health (510)231-0623 (International) 575 Market St., Room 2900 TRANSPORTATION (24 hr): CHEMTREC San Francisco, CA 94105-2856 (800)424-9300 or (202)483-7616 PRODUCT INFORMATION: (800) 582-3835 (800)228-3500 MSDS Requests 2. COMPOSITION/INFORMATION ON INGREDIENTS COMPOSITION COMMENT: All the components of this material are on the Toxic Substances Control Act Chemical Substances Inventory. This product fits the ACGIH definition for mineral oil mist. The ACGIH TLV is 5 mg/m3, the OSHA PEL is 5 mg/m3. The proportion compositions are given to allow for the various ranges of the components present in the whole product and may not equal 100%. 100.0 % CHEVRON Ultra-Duty Grease EP NLGI 2 CONTAINING COMPONENTS AMOUNT LIMIT/OTY AGENCY/TYPE LUBRICATING BASE OIL SEVERELY REFINED PETROLEUM DISTILLATE > 70.08 5 mg/m3 (mist) ACGIH TWA 10 mg/m3 (mist) ACGIH STEL 5 mg/m3 (mist) OSHA PEL Revision Number: 4 Revision Date: 07/22/93 MSDS Number: 004501 NDA - No Data Available NA - Not Applicable

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (2400.1) by the Toxicology and Health Risk Assessment Unit, CRTC, P.O. Box 4054, Richmond, CA 94804 CHEVRON Ultra-Duty Grease EP NLGI 2 Page 2 of 7 The BASE OIL may be a mixture of any of the following: CAS 64741884, CAS 64741895, CAS 64741964, CAS 64741975, CAS 64742014, CAS 64742525, CAS 64742536, CAS 64742547, CAS 64742627, CAS 64742650, or CAS 72623837. LITHIUM BASE THICKENERS < 10.0% ADDITIVES < 20.0%

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure L	imit TPQ - Threshold Planning Quantity
RQ – Reportable Quantity	PEL - Permissible Exposure Limit
C – Ceiling Limít	CAS - Chemical Abstract Service Number
A1-5 - Appendix A Categories	() - Change Has Been Proposed

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS EYE: This substance is not expected to cause prolonged or significant eye irritation. SKIN: This substance is not expected to cause prolonged or significant skin irritation. If absorbed through the skin, this substance is considered practically non-toxic to internal organs. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part. INGESTION: The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if swallowed. INHALATION: The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if inhaled.

4. FIRST AID MEASURES

EYE: No first aid procedures are required. However, as a precaution flush eyes with fresh water for 15 minutes. Remove contact lenses if worn. SKIN: No first aid procedures are required. As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing. INGESTION: If swallowed, give water or milk to drink and telephone for medical Revision Number: 4 Revision Date: 07/22/93 MSDS Number: 004501 NDA - No Data Available NA - Not Applicable CHEVRON Ultra-Duty Grease EP NLGI 2 Page 3 of 7 advice. Consult medical personnel before inducing vomiting. If medical advice cannot be obtained, then take the person and product container to the nearest medical emergency treatment center or hospital. INHALATION: Since this material is not expected to be an immediate inhalation problem, no first aid procedures are required. NOTE TO PHYSICIANS: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
FLASH POINT: NA
AUTOIGNITION: NDA
FLAMMABILITY LIMITS (% by volume in air): Lower: NA Upper: NA
EXTINGUISHING MEDIA:
 CO2, Dry Chemical, Foam, Water Fog
NFPA RATINGS: Health 1; Flammability 1; Reactivity 0.
FIRE FIGHTING INSTRUCTIONS:
For fires involving this material, do not enter any enclosed or confined
fire space without proper protective equipment, including self-contained
breathing apparatus.
COMBUSTION PRODUCTS:
Normal combustion forms carbon dioxide, water vapor and may produce oxides
of sulfur, nitrogen and phosphorous. Incomplete combustion can produce
carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

CHEMTREC EMERGENCY NUMBER (24 hr): (800)424-9300 or (202)483-7616 ACCIDENTAL RELEASE MEASURES: Clean up spills immediately, observing precautions in Exposure Controls/ Personal Protection section.

7. HANDLING AND STORAGE

HANDLING AND STORAGE: DO NOT weld, heat or drill container. Residue may ignite with explosive violence if heated sufficiently. CAUTION! Do not use pressure to empty drum or drum may rupture with explosive force.

Revision Number: 4	Revision Date:	07/22/93	MSDS Number:	004501
NDA - No Data	Available	NA - Not	Applicable	
CHEVRON Ultra-Duty Grease	EP NLGI 2		Page	<b>4</b> of 7

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

```
PERSONAL PROTECTIVE EQUIPMENT
EYE/FACE PROTECTION:
No special eye protection is usually necessary.
SKIN PROTECTION:
No special skin protection is usually necessary. Avoid prolonged or
frequently repeated skin contact with this material. Skin contact can be
minimized by wearing protective clothing.
RESPIRATORY PROTECTION:
No special respiratory protection is normally required. However, if
operating conditions create high airborne concentrations, the use of an
approved respirator is recommended.
ENGINEERING CONTROLS:
Use adequate ventilation to keep the airborne concentrations of this
material below the recommended exposure standard.
```

9. PHYSICAL AND CHEMICAL PROPERTIES

```
PHYSICAL DESCRIPTION:
   Red grease.
pH:
                   NDA
VAPOR PRESSURE:
                   NA
VAPOR DENSITY
 (AIR=1):
                   NA
BOILING POINT:
                   NA
FREEZING POINT:
                   NDA
MELTING POINT:
                   NDA
SOLUBILITY:
                   Soluble in hydrocarbon solvents; insoluble in water.
SPECIFIC GRAVITY: NDA
DENSITY:
                   NDA
EVAPORATION RATE: NA
VISCOSITY:
                   22 cSt @ 100C (Min.)
PERCENT VOLATILE
 (VOL):
                   NA
```

#### 10. STABILITY AND REACTIVITY

Revision Number: 4

```
HAZARDOUS DECOMPOSITION PRODUCTS:
NDA
CHEMICAL STABILITY:
Stable.
CONDITIONS TO AVOID:
No data available.
INCOMPATIBILITY WITH OTHER MATERIALS:
May react with strong oxidizing agents, such as chlorates, nitrates,
peroxides, etc.
```

Revision Date: 07/22/93

MSDS Number: 004501

NDA - No Data Available CHEVRON Ultra-Duty Grease EP NLGI 2 NA - Not Applicable

HAZARDOUS POLYMERIZATION: Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: The Draize Eye Irritation Score (range, 0-110) in rabbits is 2.3/110. SKIN EFFECTS: The Draize Skin Primary Irritation Score (range, 0-8) for a 4-hour exposure (rabbits) is 0.6/8.0. The dermal LD50 in rabbits is greater than 2.0 g/kg. ACUTE ORAL EFFECTS: No product toxicology data available. The hazard evaluation was based on data from similar materials. ACUTE INHALATION EFFECTS: No product toxicology data available. The hazard evaluation was based on data from similar materials. ADDITIONAL TOXICOLOGY INFORMATION: This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

#### 12. ECOLOGICAL INFORMATION

ECOTOXICITY: No data available. ENVIRONMENTAL FATE: This material is not expected to present any environmental problems other than those associated with oil spills.

13. DISPOSAL CONSIDERATIONS

DISPOSAL CONSIDERATIONS: Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of this material.

Revision Number: 4Revision Date: 07/22/93MSDS Number: 004501NDA - No Data AvailableNA - Not Applicable

#### 14. TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT SHIPPING NAME: NOT DESIGNATED AS A HAZARDOUS MATERIAL BY THE FEDERAL DOT DOT HAZARD CLASS: NOT APPLICABLE DOT IDENTIFICATION NUMBER: NOT APPLICABLE DOT PACKING GROUP: NOT APPLICABLE

#### 15. REGULATORY INFORMATION

SARA 311 CATEGORIES:1. Immediate (Acute) Health Effects:NO2. Delayed (Chronic) Health Effects:NO3. Fire Hazard:NO4. Sudden Release of Pressure Hazard:NO5. Reactivity Hazard:NO

#### REGULATORY LISTS SEARCHED:

01=SARA 313	11=NJ RTK	21=TSCA Sect 4(e)
02=MASS RTK	12=CERCLA 302.4	22=TSCA Sect 5(a)(e)(f)
03=NTP Carcinogen	13=MN RTK	23=TSCA Sect 6
04=CA Prop 65-Carcin	14=ACGIH TWA	24=TSCA Sect 12(b)
05=CA Prop 65-Repro Tox	15=ACGIH STEL	25=TSCA Sect 8(a)
06=IARC Group 1	16≕ACGIH Calc TLV	26=TSCA Sect 8(d)
07=IARC Group 2A	17=OSHA PEL	28=Canadian WHMIS
08=IARC Group 2B	19=Chevron TWA	29=OSHA CEILING
09=SARA 302/304	20=EPA Carcinogen	30=Chevron STEL
10=PA RTK	-	

The following components of this material are found on the regulatory lists indicated.

SEVERELY REFINED PETROLEUM DISTILLATE is found on lists: 14,15,17,

#### 16. OTHER INFORMATION

NFPA RATINGS: Health 1; Flammability 1; Reactivity 0; (Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

Revision Number: 4Revision Date: 07/22/93MSDS Number: 004501NDA - No Data AvailableNA - Not ApplicableCHEVRON Ultra-Duty Grease EP NLGI 2Page 7 of 7

REVISION STATEMENT: Revised to update Section 2 (Composition) and Section 4 (First Aid Measures ) and revises the MSDS to comply with the ANSI Z400.1 Standard.

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The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Revision Number: 4 Revision Date: 07/22/93 MSDS Number: 004501 NDA - No Data Available NA - Not Applicable



**PART I** What is the material and what do I need to know in an emergency?

## **1. PRODUCT IDENTIFICATION**

PRODUCT:

## ULTRA-LOW SULFUR DIESEL

TRADE NAMES/SYNONYMS:

Low Sulfur Diesel; Tax-Exempt Diesel (Low Sulfur); Tax-Exempt Diesel; Premium Low Sulfur Diesel; Premium Tax-Exempt Diesel (Low Sulfur); Premium Diesel; Tax-Exempt Premium Diesel; #2 Diesel; Premium #2 Diesel

CHEMICAL NAME/CLASS: Mixed Petroleum Hydrocarbons

MANUFACTURER'S NAME: ADDRESS:

**EMERGENCY PHONE**:

<u>BUSINESS PHONE</u>: <u>DATE OF PREPARATION</u>: **FRONTIER REFINING INC.** PO Box 1588 Cheyenne, WY 82003 CHEMTREC: 1-800-424-9300 International: 1-202-483-7616 (307) 634-3551 August 21, 2006

## 2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	%	EXPOSURE LIMITS IN AIR					
		v/v	ACGIH		OSHA			
			TLV	STEL	PEL	STEL	IDLH	OTHER
			ppm	ppm	ppm	ppm	ppm	
Diesel Fuel #2	68476-34-6	>94	300 (Gasoline)	500 (Gasoline)	100 (Petroleum Distillates)	NE	10,000 (Petroleum Distillates)	NIOSH REL: 350 mg/m ³
Sulfur	7704-34-9	<0.00018	NE	NE	NE	NE	NE	NE
Red Dye (Tax Exempt Version ONLY)	Not Applicable	< 0.1	NE Due to the low concentration of the dye in the product, this component does not contribute significantly to the hazards associated with the Tax-Exempt version of this product. All applicable hazard information has been presented in the following sections, as is required by the Federal Hazard Communication Standard (29 CFR 1910.1200).				ne Tax-Exempt as been	

NE = Not Established C = Ceiling Level See Section 16 for Definitions of Terms Used.

NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

## ULTRA-LOW SULFUR DIESEL MSDS PAGE 1 OF 8

## **3. HAZARD IDENTIFICATION**

**EMERGENCY OVERVIEW:** This clear to light-yellow liquid (or red liquid, if Tax-Exempt) is combustible and slightly toxic by inhalation and ingestion. Vapors from this material (especially when the liquid is at an elevated temperature) may travel a considerable distance to an ignition source and flashback. A fire involving this liquid may produce heavy, black smoke. Provide adequate fire protection and ventilation. Control vapor with a fog or mist spray.

<u>SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE</u>: Over-exposure to this product may cause the symptoms described in this section. The product is slightly toxic by inhalation and ingestion.

<u>INHALATION</u>: Inhalation of excessive amounts of vapors or mists of this product may cause respiratory difficulty, shortness of breath, wheezing, headache, dizziness, indigestion, nausea, and, at high concentrations, unconsciousness or death. The skin of a victim of over-exposure may have a blue color.

<u>CONTACT WITH SKIN or EYES</u>: Occasional contact of the liquid with the skin, if promptly removed, usually does not cause observable symptoms. Irritation, itching, redness, possibly blisters, and dermatitis may occur if the liquid is allowed to remain in contact with the skin. If splashed into the eyes, pain and irritation will occur. If exposed to vapors in excess of several hundred ppm, eye irritation may occur.

SKIN ABSORPTION: This product contains a petroleum hydrocarbon mid-distillate. Some studies suggest that the product may enter the body via prolonged contact with the skin and produce symptoms described under "INHALATION".

<u>INGESTION</u>: Ingestion of this product may cause all of the symptoms indicated under "Inhalation Exposure", as well as indigestion, vomiting, and chemical pneumonia.

<u>INJECTION</u>: Accidental injection of this productl cause local irritation, and possible systemic effects, similar to those of ingestion and inhalation, depending upon the amount injected.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: Over-exposure to this product may cause the following health effects:

**ACUTE**: The most likely route of over-exposure is inhalation. Symptoms including respiratory difficulty, shortness of breath, wheezing, headache, dizziness, indigestion, nausea, and, at high concentrations, unconsciousness or death. The skin of a victim of over-exposure may have a blue color. Ingestion may cause stomach distress, vomiting, dizziness, and respiratory problems, including pneumonia-like symptoms.

**CHRONIC**: This product contains components associated with various forms of skin cancer, as a result of prolonged contact with the liquid. Brief or intermittent contact with this product is not expected to produce any serious effects if it is washed from the skin promptly.

HAZARDOUS MATERIAL INFORMATION SYSTEM							
HEAL	HEALTH (BLUE) 0						
FLAMMABILITY (RED) 2							
REACTIVITY (YELLOW) 0							
PROTECTIVE EQUIPMENT							
EYES	EYES RESPIRATORY HANDS BODY						
SEE SECTION 8							
For routine industrial applications							

## **PART II** What should I do if a hazardous situation occurs?

## 4. FIRST-AID MEASURES

<u>SKIN EXPOSURE</u>: For splashes which are associated with routine chemical use and which contaminate a small area of the skin, wash skin thoroughly with soap and water. If irritation develops or persists, consult a physician. For major contaminations, begin decontamination with running water for at least 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victims must seek immediate medical attention.

<u>EYE EXPOSURE</u>: If this product is splashed in eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. <u>Minimum</u> flushing is for 15 minutes. The victim must seek immediate medical attention after eye exposures.

<u>INHALATION</u>: If vapors of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers. The victim of inhalation exposure must seek medical attention if such an exposure results in any adverse health effect.

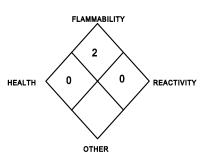
<u>INGESTION</u>: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Victim should drink milk, egg whites, or large quantities of water. Never induce vomiting or give diluents (milk or water) to someone who is <u>unconscious</u>, having convulsions, or who cannot swallow.

Victims of chemical exposure must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or health professional with victim.

## 5. FIRE-FIGHTING MEASURES

<u>FLASH POINT, °F (method)</u>: > 130°F (CC) <u>AUTOIGNITION TEMPERATURE, °F</u>: > 494°F <u>FLAMMABLE LIMITS (in air by volume, %)</u>:

Lower (LEL): 0.4% Upper (UEL): 6.0%



FIRE EXTINGUISHING MATERIALS:

 Water Spray:
 YES (cooling)
 Carbon Dioxide:
 YES
 Foam:
 YES

 Dry Chemical:
 YES
 Halon:
 YES
 Other:
 Any "B" Class.

 UNUSUAL FIRE AND EXPLOSION HAZARDS:
 When involved in a fire, this material may decompose

 and produce irritating fumes and toxic gases including carbon monoxide and carbon dioxide, and heavy, black soot.
 black soot.

<u>Explosion Sensitivity to Mechanical Impact</u>: Not Sensitive. <u>Explosion Sensitivity to Static Discharge</u>: Static discharge may cause this product to ignite or cause vapors to explode.

<u>SPECIAL FIRE-FIGHTING PROCEDURES</u>: Liquid may evaporate when heated to form flammable vapors that can ignite explosively. Incipient fire responders should wear eye protection. Structural fire fighters should wear Self-Contained Breathing Apparatus and full protective equipment. A fog or mist should be used to control vapor spread and to keep exposed containers cool.

## 6. ACCIDENTAL RELEASE MEASURES

<u>SPILL AND LEAK RESPONSE</u>: Uncontrolled releases should be responded to by trained personnel. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people. Adequate fire protection should be provided. Absorb liquid with activated carbon, sand, or other suitable absorbent materials. Decontaminate the area thoroughly. Place all spill residue in an appropriate container and seal. Dispose of in accordance with Federal, State, and local hazardous waste disposal regulations (see Section 13).

## PART III How can I prevent hazardous situations from occurring?

## 7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash hands after handling this product. Do not eat or drink while handling chemicals. Employ engineering controls to maintain employee exposures below values recommended in Section 2.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Avoid breathing vapors or mists generated by this product. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Keep container tightly closed when not in use. Wash thoroughly after using this material. All transfer and storage equipment must be grounded and bonded. Do not pressurize, weld, cut, braze, solder, grind or drill on or near full or empty containers. Empty containers retain residue and may explode if subjected to heat or fire. Release of vapors must be controlled to prevent vapor accumulation or ignition.

<u>PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT</u>: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment by steaming, purging with an inert gas, or using soapy water before maintenance begins. Entry into vessels used to store this material should be done after proper cleaning, purging, and with proper confined-space entry and testing (per 29 CFR 1910.146). Collect all rinse water and dispose of according to applicable Federal, State, or local procedures.

## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

<u>VENTILATION AND ENGINEERING CONTROLS</u>: Use with adequate ventilation. Use a mechanical fan or vent area to outside. Maintain vapor concentrations below levels recommended in Section 2.

<u>RESPIRATORY PROTECTION</u>: Respiratory protection may be needed if working in an enclosed location and this product is heated. Maintain airborne contaminant concentrations below guidelines listed in Section 2. If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134, or applicable State regulations. Use supplied air respiration protection if oxygen levels are below 19.5%. If oxygen levels are appropriate, an air-purifying respirator with an organic vapor cartridge may be used when the concentration of this product is below 1,000 ppm. Otherwise, a supplied air system must be used, if respiratory protection is needed.

EYE PROTECTION: Splash goggles or safety glasses. Transfer of large quantities under pressure may require use of a full face shield.

HAND PROTECTION: Wear nitrile or neoprene rubber gloves for routine industrial use.

BODY PROTECTION: Use body protection appropriate for task. Transfer of large quantities under pressure may require the use of liquid impervious clothing.

### HAZARDOUS MATERIAL INFORMATION SYSTEM PERSONAL PROTECTIVE EQUIPMENT RATING: C.

## 9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY:> 1EVAPORATION RATE (n-BuAc=1): > 1.SPECIFIC GRAVITY:0.83 - 0.88MELTING POINT or RANGE: Not applicable.SOLUBILITY IN WATER:Insoluble.BOILING RANGE: 360 - 700°FVAPOR PRESSURE, mm Hg @ 20 °C:0pH: Not applicable.Log K_{ow}: 2 - 4PH: Not applicable.APPEARANCE AND ODOR:Clear to light yellow transparent liquid (or red liquid for the Tax Exempt version of this product) with an aromatic odor.HOW TO DETECT THIS SUBSTANCE (warning properties):The aromatic odor is detectable below the TLV.

## ULTRA-LOW SULFUR DIESEL MSDS PAGE 4 OF 8

## **10. STABILITY and REACTIVITY**

<u>STABILITY</u>: Stable. <u>DECOMPOSITION PRODUCTS</u>: Carbon monoxide, carbon dioxide. <u>MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE</u>: Strong oxidizers, highly reactive chemicals. <u>HAZARDOUS POLYMERIZATION</u>: Will not occur. <u>CONDITIONS TO AVOID</u>: Contact with incompatible materials and exposure to heat, sparks and other sources of ignition.

## **PART IV** Is there any other useful information about this material?

## **11. TOXICOLOGICAL INFORMATION**

TOXICITY DATA: Toxicology data for Low Sulfur Diesel are provided below.

### LOW SULFUR DIESEL:

 $LD_{50}$  (oral-rat) = 20 ml/kg The actual symptoms observed depend on whether the product is aspirated into the lungs. Chemical induced pneumonia may be delayed for several hours following aspiration.

SULFUR:

Eye irritancy (human) 8 ppm LDLo (intravenous-rat) 8 mg/kg LDLo (intravenous-dog) 175 mg/kg LDLo (oral-rabbit) 175 mg/kg LDLo (intravenous-rabbit) 5 mg/kg LDLo (intraperitoneal-guinea pig) 55 mg/kg

**RED DYE (Tax-Exempt Product Only):** The primary health effect associated with over-exposure to the Red Dye would be irritation of contaminated skin, eyes, or other tissue. Clinical studies involving test animals (mainly rats and rabbit) exposed to relatively high doses of components of the product indicate adverse effects on the following systems: liver, kidney, central nervous system, blood system, respiratory system, eye.

<u>SUSPECTED CANCER AGENT</u>: This product contains a petroleum mid-distillate. Toxicology data from studies on similar hydrocarbon middistillates indicate that lifetime application to the skin of mice resulted in a low-level skin carcinogenicity response characterized by low tumor incidence and long latency. Other similar materials caused gene mutations in the Mouse Lymphoma Assay and the Rat Bone Marrow Assay.

IRRITANCY OF PRODUCT: Low Sulfur Diesel is a mild irritant.

SENSITIZATION TO THE PRODUCT: Low Sulfur Diesel is not believed to cause sensitization.

<u>REPRODUCTIVE TOXICITY INFORMATION</u>: Listed below is information concerning the effects of this product and its components on the human reproductive system.

<u>Mutagenicity</u>: While no mutagenicity effects have been described for Low Sulfur Diesel, petroleum mid-distillates have been reported to cause mutagenic effects during clinical studies of animals exposed to relatively high doses.

<u>Teratogenicity</u>: While no teratogenicity effects have been described for Low Sulfur Diesel, petroleum mid-distillates have been reported to cause teratogenic effects during clinical studies of animals exposed to relatively high doses.

<u>Reproductive Toxicity</u>: While no reproductive toxicity effects have been described for Low Sulfur Diesel, petroleum mid-distillates have been reported to cause reproductive toxicity effects during clinical studies of animals exposed to relatively high doses.

A <u>mutagen</u> is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. A <u>teratogen</u> is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A <u>reproductive toxin</u> is any substance that interferes in any way with the reproductive process.

BIOLOGICAL EXPOSURE INDICES: Currently, no Biological Exposure Indices (BEIs) exist for the components of this product.

<u>MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE</u>: Any pre-existing medical condition that affects the Target Organs (Section 15) for this product may be aggravated by over-exposure to Low Sulfur Diesel.

<u>RECOMMENDATIONS TO PHYSICIANS</u>: Treat symptoms and reduce or eliminate exposure.

## **12. ECOLOGICAL INFORMATION**

<u>ENVIRONMENTAL STABILITY</u>: Alkanes (which are the main components of this product) are rapidly volatilized from soil and water sources. They are not photolyzed or hydrolyzed to any great extent. Alkanes are generally not mobile in soil. The  $K_{oc}$  is in the range of 5500 - 15,000. The half-life in ponds and rivers is estimated at less than 30 days. Aromatic compounds may volatilize from soil, but residue tends to be highly mobile and may leach into groundwater. Biodegradation of aromatic compounds may occur in shallow soil and in shallow, aerobic water; it probably is not significant in anaerobic soil or water. Because local conditions may prevent loss from soil or water, all work practices should be aimed at preventing releases to the environment. In the event of a release to soil, the contaminated soil should be removed, if possible.

<u>EFFECT OF MATERIAL ON PLANTS or ANIMALS</u>: The effect of Low Sulfur Diesel on plants is related to the removal of natural oils from the plants or the prevention of respiration. Plants may die if Low Sulfur Diesel is spilled on them. Animals may exhibit narcotic symptoms and inhalation or ingestion symptoms similar to those described in Section 3, for humans.

<u>EFFECT OF CHEMICAL ON AQUATIC LIFE</u>: Low Sulfur Diesel floats on water and may prevent oxygen from entering the water. The bioconcentration factor is estimated in the range of 3.5 -4.3 (log scale), indicating that bio-concentration may be an important factor in aquatic systems. Releases of Low Sulfur Diesel to water systems may prove damaging to aquatic life.

## **13. DISPOSAL CONSIDERATIONS**

<u>PREPARING WASTES FOR DISPOSAL</u>: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

EPA WASTE NUMBER: D001 (Characteristic-Ignitable), for wastes consisting only of this product.

## **14. TRANSPORTATION INFORMATION**

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME:Diesel FuelHAZARD CLASS NUMBER and DESCRIPTION:3 (Flammable Liquid)UN IDENTIFICATION NUMBER:NA 1993PACKING GROUP:IIIDOT LABEL(S) REQUIRED:NoneNORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996):128NOTE: The bulk packaging requirements of 49 CFR 173.241 are applicable.MARINE POLLUTANT: Low Sulfur Diesel is not a Marine Pollutant (per 49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED ASDANGEROUS GOODS.PROPER SHIPPING NAME:Fuel OilHAZARD CLASS NUMBER and DESCRIPTION:3 (Flammable Liquid)UN IDENTIFICATION NUMBER:UN 1202PACKING GROUP:IIILABEL(S) REQUIRED:Flammable LiquidCANUTEC RESPONSE GUIDE NUMBER:15

## **15. REGULATORY INFORMATION**

<u>SARA REPORTING REQUIREMENTS</u>: Facilities that have Low Sulfur Diesel on-site must report such information to the local Agency, or provide them with a copy of this MSDS, (as the Agency requires) under SARA 311. This information may be included in the employer's Tier I report. Additional reports, (Tier II) under SARA 312, may be required by local or State authorities.

SARA Threshold Planning Quantity: Not applicable.

TSCA INVENTORY STATUS: Low Sulfur Diesel is listed on the TSCA Inventory.

CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

<u>OTHER FEDERAL REGULATIONS</u>: Oil Pollution Act - 1990. For certain operations, the requirements of the Federal OSHA Permit-Required Confined Spaces Standard (29 CFR 1910.146) may be applicable.

STATE REGULATORY INFORMATION: The components of this product are covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: None. California - Permissible Exposure Limits for Chemical Contaminants: None. Florida - Substance List: None. Illinois - Toxic Substance List: None. Kansas - Section Massachusetts - Substance List: None. 302/313 List: None. Minnesota - List of Hazardous Substances: None. Missouri - Employer Information/Toxic Substance List: None. New Jersey - Right to Know Hazardous Substance List: None. North Dakota - List of Hazardous Chemicals, Reportable Quantities: None. Pennsylvania - Hazardous Substance List: Diesel Fuel. Rhode Island - Hazardous Substance List: Diesel Fuel. Texas - Hazardous Substance List: None. West Virginia - Hazardous Substance List: None. Wisconsin - Toxic and Hazardous Substances: None.

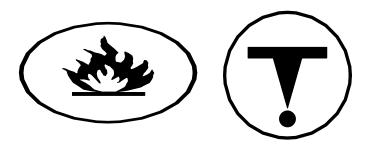
CALIFORNIA PROPOSITION 65: Low Sulfur Diesel is not listed on the California Proposition 65 lists; however, Diesel Fuel Exhaust is listed as known to the State of California to cause cancer.

<u>LABELING (Precautionary Statements)</u>: DANGER! Combustible when heated. May cause skin irritation. May be harmful upon prolonged or repeated skin contact or inhalation. May cause dizziness, drowsiness, or eye irritation. Ingestion may cause severe gastric distress. Avoid heat, sparks, or sources of ignition. Vapors are heavier than air and may spread over a considerable distance to an ignition source and flash back. Vapors may explode. Do not allow vapor accumulation in confined locations. Provide adequate ventilation to avoid over-exposure. Do not get this product on your skin. If skin or eyes are splashed with this product, rinse the affected area immediately for at least 15 minutes. Promptly seek medical attention. Trained employees must clean-up spills promptly, using procedures designed to prevent fire. Do not flush to a sewer. In case of fire, use fog, foam, dry chemical or  $CO_2$ . Liquid will float on water and may reignite.

Keep away from oxidizing material. Keep container closed and away from heat or direct sunlight. Static electricity may be generated when handling. Use proper grounding and bonding procedures. Do not pressurize, weld, cut, braze, solder, grind or drill on or near full or empty containers. Empty containers retain residue and may explode if subjected to heat or fire. Release of vapors must be controlled to prevent vapor accumulation or ignition. For industrial use only. Keep away from children. See MSDS for additional information.

TARGET ORGANS: Skin, eyes, lungs.

WHMIS SYMBOLS:



## **16. OTHER INFORMATION**

#### **PREPARED BY:**

Mike Wild, CIH Frontier Refining, Inc. P0 Box 1588 Cheyenne, WY 82003-1588 307-771-8739

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Frontier Refining Inc. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Frontier Refining Inc. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

## **DEFINITIONS OF TERMS**

A large number of abbreviations and acronyms appear of a MSDS. Some of these which are commonly used include the following:

**CAS** #: This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

#### EXPOSURE LIMITS IN AIR:

**ACGIH** - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (TWA), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level. Skin adsorption effects must also be considered.

OSHA - U.S. Occupational Safety and Health Administration.

**PEL - Permissible Exposure Limit** - this exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The **IDLH - Immediately Dangerous to Life and Health** level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (OSHA). NIOSH issues exposure guidelines called Recommended Exposure Levels (**REL**s). When no exposure guidelines are established, an entry of **NE** is made for reference. **FLAMMABILITY LIMITS IN AIR**: Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). <u>LEL</u> - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

#### TOXICOLOGICAL INFORMATION

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are:  $LD_{50}$  - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC50 - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; mg/m³ concentration expressed in weight of substance per volume of air; mg/kg quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: IARC - the International Agency for Research on Cancer; NTP - the National Toxicology Program, RTECS - the Registry of Toxic Effects of Chemical Substances, OSHA and CAL/OSHA. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include TDLo, the lowest dose to cause a symptom and TCLo the lowest concentration to cause a symptom; TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo, the lowest dose (or concentration) to cause death. BEI - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Other measures of toxicity include TDLo, the lowest dose to cause a symptom; TDo, LDLo, and LDo, the lowest dose to cause death.

#### **REGULATORY INFORMATION**

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazard information System. **DOT** and **CTC** are the U.S. Department of Transportation and the Canadian Transportation Commission, respectively. These are: **Superfund Amendments and Reauthorization Act (SARA)**; the **Toxic Substance Control Act (TSCA)**; Marine Pollutant status according to the **DOT**; California's Safe Drinking Water Act (**Proposition 65**); the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)**; and various state regulations. This section also includes information on the precautionary warnings which appear on the materials package label.l



## SAFETY DATA SHEET

1. Identification			
Product identifier	UNLEADED GASOLINE		
Other means of identification	UNLEADED GASOLINE		
SDS number	002-GHS		
Synonyms	Gasoline, CARB (California Air Resource Boar	I Unleaded Gasoline, Non-Oxygenated Unleaded	
Recommended use	Motor Fuel Motor fuels.		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplier/	Distributor information		
Manufacturer/Supplier General Assistance E-Mail Contact Person Emergency Telephone	Valero Marketing & Supply Company and Affiliates One Valero Way San Antonio, TX 78269-6000 210-345-4593 CorpHSE@valero.com Industrial Hygienist 24 Hour Emergency 866-565-5220 1-800-424-9300 (CHEMTREC USA)		
2. Hazard(s) identification			
Physical hazards	Flammable liquids	Category 1	
Health hazards	Skin corrosion/irritation	Category 2	
	Germ cell mutagenicity Carcinogenicity	Category 1B Category 1B	
	Reproductive toxicity	Category 2	
	Specific target organ toxicity, single exposure Specific target organ toxicity, repeated exposure	Category 3 narcotic effects Category 2	
	Aspiration hazard	Category 1	
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 2	
OSHA defined hazards	Not classified.		
Label elements			
		>	

Signal word Hazard statement

Extremely flammable liquid and vapor. Causes skin irritation. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. May cause drowsiness or dizziness. May cause damage to organs (blood, liver, kidney) through prolonged or repeated exposure. May be fatal if swallowed and enters airways. Toxic to aquatic life with long lasting effects.

Danger

Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting// equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe gas/mist/vapors/spray. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment.
Response	If exposed or concerned: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water fog for extinction. Collect spillage.
Storage	Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	CAS number	%
Gasoline	86290-81-5	80-100
Toluene	108-88-3	0-30
Hexane (Other Isomers)	96-14-0	5-25
Xylene (o, m, p isomers)	1330-20-7	0-25
Octane (All isomers)	111-65-9	0-18.5
Ethanol	64-17-5	0-10
1,2,4, Trimethylbenzene	95-63-6	0-6
n-Heptane	142-82-5	1-5
Pentane	109-66-0	1-5
Cumene	98-82-8	0-5
Ethylbenzene	100-41-4	0-5
Benzene	71-43-2	0-4.9
n-Hexane	110-54-3	0-3
Cyclohexane	110-82-7	0-3

## 4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water. Get medical attention if irritation develops or persists. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
Ingestion	Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Do not give mouth-to-mouth resuscitation. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin). Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash.

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Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	If exposed or concerned: get medical attention/advice. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use.
5. Fire-fighting measures	
Suitable extinguishing media	Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Vapor may cause flash fire. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire-fighting equipment/instructions	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Vapors may form explosive air mixtures even at room temperature. Prevent buildup of vapors or gases to explosive concentrations. Some of these materials, if spilled, may evaporate leaving a flammable residue. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.
Specific methods	Use water spray to cool unopened containers.
General fire hazards	Extremely flammable liquid and vapor. Containers may explode when heated.
6. Accidental release meas	sures
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas.
	Use non-sparking tools and explosion-proof equipment.
	Small Spills: Absorb spill with vermiculite or other inert material, then place in a container for

Small Spills: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste.

Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent product from entering drains. Do not allow material to contaminate ground water system. Should not be released into the environment.

**Environmental precautions** 

Gasoline may contain oxygenated blend products (Ethanol, etc.) that are soluble in water and therefore precautions should be taken to protect surface and groundwater sources from contamination. If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Extremely flammable. Review Firefighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Use compatible foam to minimize vapor generation as needed. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-8802.

## 7. Handling and storage

Precautions for safe handling	Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. The product is extremely flammable, and explosive vapor/air mixtures may be formed even at normal room temperatures. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. When using, do not eat, drink or smoke. Avoid release to the environment.
Conditions for safe storage, including any incompatibilities	Flammable liquid storage. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. The pressure in sealed containers can increase under the influence of heat. Keep container tightly closed in a cool, well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

### 8. Exposure controls/personal protection

### **Occupational exposure limits**

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Туре	Value	
Benzene (CAS 71-43-2)	STEL	5 ppm	
	TWA	1 ppm	
LIC OCUA Table 7.4 Limite for Al	a Contominante (20 CED 4040	4000)	

### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Туре	Value	
Cumene (CAS 98-82-8)	PEL	245 mg/m3	
· · · · ·		50 ppm	
Cyclohexane (CAS 110-82-7)	PEL	1050 mg/m3	
		300 ppm	
Ethanol (CAS 64-17-5)	PEL	1900 mg/m3	
		1000 ppm	
Ethylbenzene (CAS 100-41-4)	PEL	435 mg/m3	
		100 ppm	
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3	
		500 ppm	
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3	
		500 ppm	
Octane (All isomers) (CAS 111-65-9)	PEL	2350 mg/m3	
,		500 ppm	
Pentane (CAS 109-66-0)	PEL	2950 mg/m3	
		1000 ppm	
Kylene (o, m, p isomers) /CAS 1330-20-7)	PEL	435 mg/m3	
		100 ppm	
US. OSHA Table Z-2 (29 CFR 1910	.1000)		
Components	Туре	Value	
Benzene (CAS 71-43-2)	Ceiling	25 ppm	
	TWA	10 ppm	
Toluene (CAS 108-88-3)	Ceiling	300 ppm	
	TWA	200 ppm	
US. ACGIH Threshold Limit Values	S		
Components	Туре	Value	
1,2,4, Trimethylbenzene (CAS 95-63-6)	TWA	25 ppm	
Benzene (CAS 71-43-2)	STEL	2.5 ppm	

### **US. ACGIH Threshold Limit Values**

Components	Туре	Value	
	TWA	0.5 ppm	
Cumene (CAS 98-82-8)	TWA	50 ppm	
Cyclohexane (CAS 110-82-7)	TWA	100 ppm	
Ethanol (CAS 64-17-5)	STEL	1000 ppm	
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm	
Gasoline (CAS 86290-81-5)	STEL	500 ppm	
	TWA	300 ppm	
Hexane (Other Isomers) (CAS 96-14-0)	STEL	1000 ppm	
· · · · ·	TWA	500 ppm	
n-Heptane (CAS 142-82-5)	STEL	500 ppm	
	TWA	400 ppm	
n-Hexane (CAS 110-54-3)	TWA	50 ppm	
Octane (All isomers) (CAS 111-65-9)	TWA	300 ppm	
Pentane (CAS 109-66-0)	TWA	600 ppm	
Toluene (CAS 108-88-3)	TWA	20 ppm	
Xylene (o, m, p isomers) (CAS 1330-20-7)	STEL	150 ppm	
````	TWA	100 ppm	

### **US. NIOSH: Pocket Guide to Chemical Hazards**

Components	Туре	Value
1,2,4, Trimethylbenzene (CAS 95-63-6)	TWA	125 mg/m3
		25 ppm
Benzene (CAS 71-43-2)	STEL	1 ppm
	TWA	0.1 ppm
Cumene (CAS 98-82-8)	TWA	245 mg/m3
		50 ppm
Cyclohexane (CAS 110-82-7)	TWA	1050 mg/m3
		300 ppm
Ethanol (CAS 64-17-5)	TWA	1900 mg/m3
		1000 ppm
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3
		125 ppm
	TWA	435 mg/m3
		100 ppm
Hexane (Other Isomers) (CAS 96-14-0)	Ceiling	1800 mg/m3
		510 ppm
	TWA	350 mg/m3
		100 ppm
n-Heptane (CAS 142-82-5)	Ceiling	1800 mg/m3
		440 ppm
	TWA	350 mg/m3
		85 ppm
n-Hexane (CAS 110-54-3)	TWA	180 mg/m3
		50 ppm
Octane (All isomers) (CAS 111-65-9)	Ceiling	1800 mg/m3
		385 ppm
	TWA	350 mg/m3
		75 ppm
Pentane (CAS 109-66-0)	Ceiling	1800 mg/m3

### **US. NIOSH: Pocket Guide to Chemical Hazards**

Components	Туре	Value	
		610 ppm	
	TWA	350 mg/m3	
		120 ppm	
Toluene (CAS 108-88-3)	STEL	560 mg/m3	
		150 ppm	
	TWA	375 mg/m3	
		100 ppm	
Xylene (o, m, p isomers) (CAS 1330-20-7)	STEL	655 mg/m3	
· · · ·		150 ppm	
	TWA	435 mg/m3	
		100 ppm	

### **Biological limit values**

### ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Benzene (CAS 71-43-2)	25 µg/g	S-Phenylmerca	Creatinine in urine	*
Ethylbenzene (CAS 100-41-4)	0.7 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
n-Hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedi - on, without hydrolysis		*
	0.4 mg/l	2,5-Hexanedio n, without hydrolysis	Urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*
Xylene (o, m, p isomers) (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*

* - For sampling details, please see the source document.

### **Exposure guidelines**

US - California OELs: Skin de	esignation
Benzene (CAS 71-43-2)	Can be absorbed through the skin.
Cumene (CAS 98-82-8)	Can be absorbed through the skin.
n-Hexane (CAS 110-54-3)	Can be absorbed through the skin.
Toluene (CAS 108-88-3)	Can be absorbed through the skin.
US - Minnesota Haz Subs: Sł	in designation applies
Cumene (CAS 98-82-8)	Skin designation applies.
Toluene (CAS 108-88-3)	Skin designation applies.
US - Tennesse OELs: Skin de	esignation
Cumene (CAS 98-82-8)	Can be absorbed through the skin.
US ACGIH Threshold Limit V	alues: Skin designation
Benzene (CAS 71-43-2)	Can be absorbed through the skin.
n-Hexane (CAS 110-54-3)	Can be absorbed through the skin.
US. NIOSH: Pocket Guide to	Chemical Hazards
Cumene (CAS 98-82-8)	Can be absorbed through the skin.
US. OSHA Table Z-1 Limits for	or Air Contaminants (29 CFR 1910.1000)
Cumene (CAS 98-82-8)	Can be absorbed through the skin.
Appropriate engineering controls	Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment.

## Individual protection measures, such as personal protective equipment

individual protection measure	s, such as personal protective equipment
Eye/face protection	Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.
Skin protection	
Hand protection	Avoid exposure - obtain special instructions before use. Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
Other	Wear chemical-resistant, impervious gloves. Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended.
Respiratory protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

Appearance	Light straw to red clear liquid with characteristic strong odor of gasoline.		
Physical state	Liquid.		
Form	Liquid.		
Color	Light straw to red clear.		
Odor	Characteristic Gasoline Odor (Strong).		
Odor threshold	Not available.		
рН	Not available.		
Melting point/freezing point	44.01 °F (6.67 °C) May start to solidify at this temperature. This is based on data for the following ingredient: Cyclohexane. Weighted average: -91.9 deg C (-133.4 deg F)		
Initial boiling point and boiling range	80.06 - 440.06 °F (26.7 - 226.7 °C)		
Flash point	-40.0 °F (-40.0 °C) (closed cup)		
Evaporation rate	10 - 11 BuAc		
Flammability (solid, gas)	Not available.		
Upper/lower flammability or exp	losive limits		
Flammability limit - lower (%)	1.3 %		
Flammability limit - upper (%)	7.1 %		
Explosive limit - lower (%)	Not available.		
Explosive limit - upper (%)	Not available.		
Vapor pressure	60.8 - 101.3 kPa (20°C)		
Vapor density	3 - 4 (Air=1)		
Relative density	Not available.		
Solubility(ies)			
Solubility (water)	Very slightly soluble.		
Partition coefficient (n-octanol/water)	Not available.		
Auto-ignition temperature	> 500 °F (> 260 °C)		
Decomposition temperature	Not available.		
Viscosity	Not available.		

Other information	
Flash point class	Flammable IA
VOC (Weight %)	100 %

## 10. Stability and reactivity

Reactivity	None known.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

Ingestion	Swallowing or vomiting of the liquid may result in aspiration into the lungs.		
Inhalation	In high concentrations, mists/vapors may irritate throat and respiratory system and cause coughing. May cause drowsiness or dizziness.		
Skin contact	Causes skin irritation. Prolonged contact may cause dryness of the skin.		
Eye contact	May cause eye irritation.		
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin). Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash.		

#### Information on toxicological effects

Acute toxicity

Based on available data, the classification criteria are not met.

Components	Species	Test Results
1,2,4, Trimethylbenzene (C	AS 95-63-6)	
Acute		
Dermal		
LD50	Rabbit	> 3160 mg/kg
Inhalation		
LC50	Rat	> 2000 mg/l, 48 Hours
Oral		
LD50	Rat	6 g/kg
Benzene (CAS 71-43-2)		
Acute		
Oral		
LD50	Rat	3306 mg/kg
Cumene (CAS 98-82-8)		
Acute		
Inhalation		
LC50	Mouse	2000 mg/l, 7 Hours
	Rat	8000 mg/l, 4 Hours
Oral		
LD50	Rat	1400 mg/kg
Cyclohexane (CAS 110-82-	-7)	
Acute		
Oral		
LD50	Rat	12705 mg/kg

Components	Species	Test Results
Ethanol (CAS 64-17-5)		
Acute		
Inhalation		
LC50	Rat	30000 mg/m3
thylbenzene (CAS 100-41-4)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Oral		
LD50	Rat	5.46 g/kg
-Heptane (CAS 142-82-5)		
Acute		
Inhalation		
LC50	Rat	103 mg/l, 4 Hours
-Hexane (CAS 110-54-3)		
Acute		
Oral		
LD50	Rat	28710 mg/kg
Octane (All isomers) (CAS 111-65-	9)	
Acute		
Inhalation		
LC50	Rat	118 mg/l, 4 Hours
entane (CAS 109-66-0)		
Acute		
Inhalation		
LC50	Rat	364 mg/l, 4 Hours
oluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	14.1 ml/kg
Inhalation		
LC50	Rat	8000 mg/l, 4 Hours
Oral		<b>J</b>
LD50	Rat	2.6 g/kg
(Vlene (o, m, p isomers) (CAS 133		
Acute	0-20-1)	
Oral		
LD50	Rat	4300 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye rritation	Based on available data, the classification criteria	a are not met.
Respiratory or skin sensitization		
Respiratory sensitization	Based on available data, the classification criteria	a are not met
Skin sensitization		
	Based on available data, the classification criteria are not met. This substance may have a potential for sensitization which may provoke an allergic reaction among sensitive individuals.	
Germ cell mutagenicity May cause genetic defects. In in-vitro experiments, neither benzene, toluene nor xylene changed the r sister-chromatid exchanges (SCEs) or the number of chromosomal aberra lymphocytes. However, toluene and xylene caused a significant cell growt not observed with benzene in the same concentrations. In in-vivo experim the number of sister-chromatid exchanges (SCEs) in human lymphocytes. heritable genetic damage.		er of chromosomal aberrations in human ed a significant cell growth inhibition which was ations. In in-vivo experiments, toluene changed

Carcinogenicity	May cause cancer.		
IARC Monographs. Overall Evaluation of Carcinogenicity			
Benzene (CAS 71-43-2) Cumene (CAS 98-82-8) Ethylbenzene (CAS 100-41-4) Gasoline (CAS 86290-81-5) Toluene (CAS 108-88-3) Xylene (o, m, p isomers) (CAS 1330-20-7) NTP Report on Carcinogens Benzene (CAS 71-43-2)		<ol> <li>Carcinogenic to humans.</li> <li>Possibly carcinogenic to humans.</li> <li>Possibly carcinogenic to humans.</li> <li>Possibly carcinogenic to humans.</li> <li>Not classifiable as to carcinogenicity to humans.</li> <li>Not classifiable as to carcinogenicity to humans.</li> <li>Known To Be Human Carcinogen.</li> </ol>	
	lated Substances (29 CFR 19	-	
Benzene (CAS 71-43-2)		Cancer	
Reproductive toxicity	Suspected of damaging fertility or the unborn child. Benzene, xylene and toluene have demonstrated animal effects of reproductive toxicity. Animal studies of benzene have shown testicular effects, alterations in reproductive cycles, chromosomal aberrations and embryo/fetotoxicity. Ethanol has demonstrated human effects of reproductive toxicity. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Avoid exposure to women during early pregnancy. Avoid contact during pregnancy/while nursing.		
Specific target organ toxicity - single exposure	May cause drowsiness or dizziness.		
Specific target organ toxicity - repeated exposure	May cause damage to the following organs through prolonged or repeated exposure: Blood. Kidneys. Liver.		
Aspiration hazard	May be fatal if swallowed and enters airways.		
Chronic effects	Repeated exposure of laboratory animals to high concentrations of gasoline vapors has caused kidney damage and cancer in rats and cancer in mice. Gasoline was evaluated for genetic activity in assays using microbial cells, cultured mammalian cells and rat bone marrow cells. The results were all negative so gasoline was considered nonmutagenic under these conditions. Overexposure to this product or its components has been suggested as a cause of liver abnormalities in laboratory animals and humans. Lifetime studies by the American Petroleum Institute have shown that kidney damage and kidney cancer can occur in male rats after prolonged inhalation exposures at elevated concentrations of total gasoline. Kidneys of mice and female rats were unaffected. The U.S. EPA Risk Assessment Forum has concluded that the male rat kidney tumor results are not relevant for humans. Total gasoline exposure also produced liver tumors in female mice only. The implication of these data for humans has not been determined.		
Further information	Symptoms may be delayed.		

## 12. Ecological information

otoxicity	Toxic to a	iquatic organisms, may cause long-term advers	e effects in the aquatic environment.
Components		Species	Test Results
1,2,4, Trimethylbenzer	ne (CAS 95-63-6)		
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	7.19 - 8.28 mg/l, 96 hours
Benzene (CAS 71-43-	2)		
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	8.76 - 15.6 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	7.2 - 11.7 mg/l, 96 hours
Cumene (CAS 98-82-8	3)		
Aquatic			
Crustacea	EC50	Brine shrimp (Artemia sp.)	3.55 - 11.29 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.7 mg/l, 96 hours
Cyclohexane (CAS 11	0-82-7)		
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	3.961 - 5.181 mg/l, 96 hours
		Striped bass (Morone saxatilis)	8.3 mg/l, 96 hours

Components		Species	Test Results
Ethanol (CAS 64-17-5)			
Aquatic			
Algae	EC50	Freshwater algae	275 mg/l, 72 Hours
		Marine water algae	1970 mg/l
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
		Freshwater fish	11200 mg/l, 96 Hours
Invertebrate	EC50	Freshwater invertebrate	5012 mg/l, 48 Hours
		Marine water invertebrate	857 mg/l, 48 Hours
Ethylbenzene (CAS 100-41-4)	)		oorg.,, .ooo
Aquatic	/		
•	EC50	Water flea (Daphnia magna)	1 - 4 mg/l, 48 hours
-	LC50	Rainbow trout, donaldson trout	4 mg/l, 96 hours
	2000	(Oncorhynchus mykiss)	r mg/l, oo nouro
n-Heptane (CAS 142-82-5)			
Aquatic			
Fish	LC50	Western mosquitofish (Gambusia affinis)	4924 mg/l, 96 hours
n-Hexane (CAS 110-54-3)			
Aquatic			
-	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours
Toluene (CAS 108-88-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)	6.86 - 8.48 mg/l, 96 hours
Xylene (o, m, p isomers) (CAS	S 1330-20-7)	( ,	
Aquatic	,		
	LC50	Rainbow trout,donaldson trout	8 mg/l, 96 Hours
		(Oncorhynchus mykiss)	
sistence and degradability	Not available.		
accumulative potential	Not available.		
Partition coefficient n-octan	ol / water (log k	Kow)	
Benzene (CAS 71-43-2)		2.13	
Cumene (CAS 98-82-8)		3.66	
Cyclohexane (CAS 110-82-7) Ethanol (CAS 64-17-5)		3.44 -0.31	
Ethylbenzene (CAS 100-41-4)		3.15	
Hexane (Other Isomers) (CAS 96-14-0)		3.6	
Octane (All isomers) (CAS 111-65-9)		5.18	
Pentane (CAS 109-66-0)		3.39	
Toluene (CAS 108-88-3)		2.73	
Xylene (o, m, p isomers) (CAS 1330-20-7)		3.2	
n Hantona (CAS 110 00 E)		4.66	
n-Heptane (CAS 142-82-5)		3.9	
n-Hexane (CAS 110-54-3)	Nation 11-1-1		
	Not available. Not available.		

Disposal instructions	Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 °F D018: Waste Benzene

US RCRA Hazardous Waste	U List: Reference
Benzene (CAS 71-43-2)	U019
Cumene (CAS 98-82-8)	U055
Cyclohexane (CAS 110-82	
Toluene (CAS 108-88-3)	U220
Xylene (o, m, p isomers) (	
Waste from residues / unused	Dispose of in accordance with local regulations.
products	Bispece et in accordance maniecal regulatione.
Contaminated packaging	Offer rinsed packaging material to local recycling facilities.
Containinated packaging	
14. Transport information	
DOT	
UN number	UN1203
UN proper shipping name	Gasoline
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	Yes
•	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	139, B33, B101, T8
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242
IATA	
UN number	UN1203
UN proper shipping name	Gasoline
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	
Environmental hazards	Yes
ERG Code	3H
	Read safety instructions, SDS and emergency procedures before handling.
IMDG	······································
UN number	UN1203
UN proper shipping name	Gasoline
Transport hazard class(es)	
Class	3
Subsidiary risk	-
	3

Subsidiary risk	-
Label(s)	3
Packing group	
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to	Not applicable. However, this product is a liquid and if transported in bulk covered under
Annex II of MARPOL 73/78 and	MARPOL 73/78, Annex I.
the IBC Code	

## 15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
TSCA Section 12(b) Expo	rt Notification (40 CFR 707, Subpt. D)
Not regulated.	
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Benzene (CAS 71-43-	2) Cancer

Central nervous system Blood Aspiration Skin Eye Respiratory tract irritation Flammability

### CERCLA Hazardous Substance List (40 CFR 302.4)

Benzene (CAS 71-43-2)	LISTED
Cumene (CAS 98-82-8)	LISTED
Cyclohexane (CAS 110-82-7)	LISTED
Ethanol (CAS 64-17-5)	LISTED
Ethylbenzene (CAS 100-41-4)	LISTED
Gasoline (CAS 86290-81-5)	LISTED
Hexane (Other Isomers) (CAS 96-14-0)	LISTED
n-Heptane (CAS 142-82-5)	LISTED
n-Hexane (CAS 110-54-3)	LISTED
Octane (All isomers) (CAS 111-65-9)	LISTED
Pentane (CAS 109-66-0)	LISTED
Toluene (CAS 108-88-3)	LISTED
Xylene (o, m, p isomers) (CAS 1330-20-7)	LISTED

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No

#### SARA 302 Extremely hazardous substance

Not listed.

Hazard categories

#### SARA 311/312 Hazardous Yes

chemical

#### SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.	
Toluene	108-88-3	0-30	
Xylene (o, m, p isomers)	1330-20-7	0-25	
1,2,4, Trimethylbenzene	95-63-6	0-6	
Cumene	98-82-8	0-5	
Ethylbenzene	100-41-4	0-5	
Benzene	71-43-2	0-4.9	
n-Hexane	110-54-3	0-3	
Cyclohexane	110-82-7	0-3	

#### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Benzene (CAS 71-43-2) Cumene (CAS 98-82-8) Ethylbenzene (CAS 100-41-4) n-Hexane (CAS 110-54-3) Toluene (CAS 108-88-3) Xylene (o, m, p isomers) (CAS 1330-20-7) Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Pentane (CAS 109-66-0)

Safe Drinking Water Act Not regulated.

#### (SDWA)

# Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Toluene (CAS 108-88-3)	6594
Drug Enforcement Administration (DEA). List 1 & 2	Exempt Chemical Mixtures (21 CFR 1310.12(c))
Toluene (CAS 108-88-3)	35 % weight/volumn
DEA Exempt Chemical Mixtures Code Number	
Toluene (CAS 108-88-3)	594

### US. Massachusetts RTK - Substance List

1,2,4, Trimethylbenzene (CAS 95-63-6) Benzene (CAS 71-43-2) Cumene (CAS 98-82-8) Cyclohexane (CAS 110-82-7) Ethanol (CAS 64-17-5) Ethylbenzene (CAS 100-41-4) Hexane (Other Isomers) (CAS 96-14-0) n-Heptane (CAS 142-82-5) n-Hexane (CAS 110-54-3) Octane (All isomers) (CAS 111-65-9) Pentane (CAS 109-66-0) Toluene (CAS 108-88-3) Xylene (o, m, p isomers) (CAS 1330-20-7) US. New Jersey Worker and Community Right-to-Know Act 1,2,4, Trimethylbenzene (CAS 95-63-6) Benzene (CAS 71-43-2) Cumene (CAS 98-82-8) Cyclohexane (CAS 110-82-7) Ethanol (CAS 64-17-5) Ethylbenzene (CAS 100-41-4) n-Heptane (CAS 142-82-5) n-Hexane (CAS 110-54-3) Octane (All isomers) (CAS 111-65-9) Pentane (CAS 109-66-0) Toluene (CAS 108-88-3) Xylene (o, m, p isomers) (CAS 1330-20-7)

#### US. Pennsylvania Worker and Community Right-to-Know Law

1,2,4, Trimethylbenzene (CAS 95-63-6) Benzene (CAS 71-43-2) Cumene (CAS 98-82-8) Cyclohexane (CAS 110-82-7) Ethanol (CAS 64-17-5) Ethylbenzene (CAS 100-41-4) Gasoline (CAS 86290-81-5) Hexane (Other Isomers) (CAS 96-14-0) n-Heptane (CAS 142-82-5) n-Hexane (CAS 110-54-3) Octane (All isomers) (CAS 111-65-9) Pentane (CAS 109-66-0) Toluene (CAS 108-88-3) Xylene (o, m, p isomers) (CAS 1330-20-7)

### US. Rhode Island RTK

1,2,4, Trimethylbenzene (CAS 95-63-6) Benzene (CAS 71-43-2) Cumene (CAS 98-82-8) Cyclohexane (CAS 110-82-7) Ethylbenzene (CAS 100-41-4) n-Hexane (CAS 110-54-3) Pentane (CAS 109-66-0) Toluene (CAS 108-88-3) Xylene (o, m, p isomers) (CAS 1330-20-7)

### **US. California Proposition 65**

### US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Benzene (CAS 71-43-2) Cumene (CAS 98-82-8) Ethylbenzene (CAS 100-41-4) Toluene (CAS 108-88-3)

#### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

### 16. Other information, including date of preparation or last revision

Issue date	13-May-2013
Revision date	23-May-2014
Version #	03
Further information	HMIS® is a registered trade and service mark of the NPCA.
NFPA Ratings	



References	ACGIH EPA: AQUIRE database NLM: Hazardous Substances Data Base US. IARC Monographs on Occupational Exposures to Chemical Agents HSDB® - Hazardous Substances Data Bank IARC Monographs. Overall Evaluation of Carcinogenicity National Toxicology Program (NTP) Report on Carcinogens ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
Disclaimer	This material Safety Data Sheet (SDS) was prepared in accordance with 29 CFR 1910.1200 by Valero Marketing & Supply Co., ("VALERO"). VALERO does not assume any liability arising out of product use by others. The information, recommendations, and suggestions presented in this SDS are based upon test results and data believed to be reliable. The end user of the product has the responsibility for evaluating the adequacy of the data under the conditions of use, determining the safety, toxicity and suitability of the product under these conditions, and obtaining additional or clarifying information where uncertainty exists. No guarantee expressed or implied is made as to the effects of such use , the results to be obtained, or the safety and toxicity of the product in any specific application. Furthermore, the information herein is not represented as absolutely complete, since it is not practicable to provide all the scientific and study information in the format of this document, plus additional information may be necessary under exceptional conditions of

use, or because of applicable laws or government regulations.

### VIBRA-GUARD TM

00515 1.00 US EA 10.06.1999 MSDS US

#### PRODUCT AND COMPANY IDENTIFICATION 1.

**Product Code** Trade Name Generic Description Manufacturer/Supplier Address

00515 VIBRA-QUARD M LUBRICANT Barold P.O. Box 1675 Houston, TX 77251

Phone Number Emergency Phone Number Chemtrec Number MBDS first Issued MSDS data revised

(281) 871-5900 (281) 871-5900 (800)424-9300 10 June 1999

#### COMPOSITION/INFORMATION ON THE COMPONENTS 2.

Hazardous Components in Preparation for US Component Name Codes ROD GREASE

Concentration 100.00%

#### HAZARD IDENTIFICATION З.

Routes of Entry	Nohe.	
Carcinogenic Status	Not considered carcinogenic by NTP, IARC, and OSHA.	
Target Organs	Nohe.	
Health Effects - Eyes	may cause slight transient initiation.	
Health Effects - Skin	Material may cause inflation.	
Health Effects - Ingestion	Not an anticipated route of exposure.	
Health Effects + inhalation	Not an anticipated route of exposure.	

#### FIRST AID MEASURES 4.

First Ald • Eyes	Wash out eye with plenty of water. Obtain medical attention if soleness or redness persists.
First Aid - Skin	Wash skin thoroughly with soap and water. Obtain medical attention.
First Ald - Ingestion	Wash out mouth with water. Do not induce vomiting, Obtain medical attention.
First Aid - Inhalation Advice to Physicians	Remove from exposure. Treat symptomatically.

#### 5. FIRE FIGHTING MEASURES

## Extinguishing Media

Use water spray, foam, dry chemical or carbon dioxide. Keep containers and surroundings cool with water spray. When heated above flash point. Moderate to severe explosion Special Hazards of Product

MSDS_US

Page 1 of 4

#### MATERIAL SAFETY DATA SHEET VIBRA-GUARD**

00515 1.00 US EA 10.08.1999 MSDS_US

## 5. FIRE FIGHTING MEASURES

hezard in confined spaces.

Protoctive Equipment for Fire-Fighting

 Weat full protective clothing and self-contained breathing apparatus.

## 6. ACCIDENTAL RELEASE MEASURES

Spill Procedures Personal Precautions Environmental Precautions Sweep up into suitable containers for recovery or disposal. Material can create slippery conditions underfoot. No specific measures necessary.

## 7. HANDLING AND STORAGE

Handling

Avoid contact with eyes, skin and clothing. Avoid breathing mist or vapor from heated material.

Störage

or vapor from heated material. Storage area should be: = cool - dry Store away from sources of heat or ignition.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Control Medsures Respiratory Protection Hand Protection Eye Protection Body Protection Exposure to this material may be controlled in a number of ways. The measures appropriate for a particular worksile depend on how the material is used and on the potential for exposure. Respiratory protection not normally required. Work gloves Safety glasses or goggles Normal work wear.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Color Odor pH Specific Gravity Boiling Range/Point (°C/F) Flash Point (PMCC) (°C/F) Explosion Limits (%) Vapor Pressure Donsity Solubility in Water Vapor Density (Air = 1) Evaporation Rate

Paste Ámber Odorless Not applicable. 0.9 Not applicable. >250/>432 None. Nöt äpplicable. 7 Ib/gal Insoluble Not determined. Not applicable.

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#### MATERIAL SAFETY DATA SHEET VIBRA-GUARD TM

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#### STABILITY AND REACTIVITY 10.

Btability

Conditions to Avoid Materials to Avoid Hazardous Polymerization Hazardous Decomposition Products

Stable under normal conditions. - High temperatures - Strong oxidizing agents

Will not occur.

oxides of carbon

#### TOXICOLOGICAL INFORMATION 11.

Acute Toxicity Chronic Toxicity/Gareinegenicity Genetoxicity Reproductive/Developmental Taxicity

No relevant studies identified. No rélevant studies idéntifiéd.

No relevant studies identified. No relevant studies identified.

#### ECOLOGICAL INFORMATION 12.

Mobility Persistence/Degradability Bio-accumulation Ecotoxicity

No relevant studies identified. No relevant studies identified. No relevant studies identified, No relevant studies identified.

#### 13, DISPOSAL

Product Disposal

Container Disposal

Dispose of in accordance with all applicable local and national regulations. Dispose of containers with care.

#### TRANSPORT INFORMATION 14.

DOT OFR 172.101 Data **UN Proper Shipping Name** UN Class **UN Number** 

Proper Shipping Name: Not Regulated Not Regulated None. Not Regulated

#### **REGULATORY INFORMATION** 15.

TSCA Listed	Yes.
California Proposition 65	This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.
SARA Title III Bect. 302 (EHS)	Not listed.
SARA Title III Sect. 311/312 Categorization	None.
SARA Title III Sect. 313	This product does not contain a chemical which is listed in Section

MSDS_US

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## MATERIAL SAFETY DATA SHEET VIBRA-GUARD™

00515 1.00 US EA 10.06.1999 MSDS_US

## 15. REGULATORY INFORMATION

313 et or above de deminis concentrations.

## 16. OTHER INFORMATION

NFPA Ratings	NFPA Code for Health 1 NFPA Code for Flammability 1 NFPA Code for Reactivity 0
Abbrevlations	<ul> <li>Registered trademark of Halliburton Energy Services Inc. (TM) Trademark of Halliburton Energy Services</li> <li>N/A: Denotes no applicable information found or available</li> <li>CAS#: Chemical Abstracts Service Number</li> <li>ACGIH: American Conference of Governmental Industrial</li> <li>Hygierilats</li> <li>OSHA: Occupational Safety and Health Administration</li> <li>TLV: Threshold Limit Value</li> <li>PEL: Permissible Exposure Limit</li> <li>STEL: Short Term Exposure Limit</li> <li>NTP: National Toxicology Program</li> <li>IARC: International Agency for Research on Gancer</li> <li>R: Risk</li> <li>Stafety</li> <li>LC50: Lethal Concentration 80%</li> <li>LD50: Lethal Dose 50%</li> <li>BOD: Biological Oxygen Demand</li> </ul>
	KoC: Soll Organic Carbon Partition Coefficient
Prepared By:	Environmental Services
All Information and management	

All information recommendations and suggestions herein concerning our product are based on tests and data believed to be reliable, however, it is the user's responsibility to determine the sefety, toxicity and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantees, expressed or implied, is made by Barold as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Barold assume any flability ensing from the use, by others, of the product referred to herein. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

MSDS US

:MORT-9-2010 08:17 FROM:

# May be used to Comply with OSHA's Hazard Communication Standard 29 CFR 1910. Standard must be consulted for specific requirements

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## U.S. Department of Labor Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072

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Other Pro Clothing	or Equip	wi _{vent}	Eye wash i	<b>itation</b>	φ	Work / Hygionic Practices	Observe ge before eati	ood personal hygiene. Wash hands ng, avoid inhalation of ingestion.



## **WD-40**



## MATERIAL SAFETY DATA SHEET

MANUFACTURER/SUPPLIER:	Canadian Office:
US Office:	WD-40 Products [Canada] Ltd.
WD-40 Company	P.O. Box 220
1061 Cudahy Place	Toronto, Ontario M9C 4V3
San Diego, CA 92110	
	<u>Information Phone #: (416) 622-9881</u>
<b>Information Phone #: (619) 275-1400</b>	Emergency Phone # 24 hr:
Emergency Phone # 24 hr:	Canutec: (613) 996-6666 –
Chemtrec: (800) 424-9300 –	Designated for use only in the event of chemical
Designated for use only in the event of chemical	emergencies involving a spill, leak, fire exposure or
emergencies involving a spill, leak, fire exposure or	accident involving chemicals
accident involving chemicals.	

PRODUCT NAME: WD-40 Aerosol PRODUCT USE: Cleaner, lubricant. MSDS DATE OF PREPARATION: March 27, 2014

#### SECTION 2 HAZARDS IDENTIFICATION

DANGER! Harmful or fatal if swallowed. Flammable aerosol. Contents under pressure. Avoid eye contact. Use with adequate ventilation. Keep away from heat, sparks and all other sources of ignition.

#### **POTENTIAL HEALTH EFFECTS**:

PRIMARY ROUTES OF ENTRY: Inhalation, skin and eye contact.

#### ACUTE EFFECTS:

INGESTION: This product has low oral toxicity. Swallowing of the liquid contents may cause irritation, nausea, vomiting and diarrhea. The liquid contents are an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis.

EYES: Contact may be mildly irritating to eyes. May cause redness and tearing.

SKIN: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis. INHALATION: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. May aggravate existing respiratory conditions such as asthma. Intentional abuse may be harmful or fatal.

CHRONIC EFFECTS: None expected.

Ingredient	CAS Number	Percent	
Aliphatic Petroleum Distillates	64742-47-8	50-70%	
-	64742-88-7		
Petroleum Base Oil	64742-58-1	30-35%	
	64742-53-6		
	64742-56-9		
	64742-65-0		
Non-Hazardous Ingredients	Proprietary	<10%	
Carbon Dioxide	124-38-9	2-3%	

#### SECTION 3 COMPOSITION INFORMATION ON INGREDIENTS

#### SECTION 4 FIRST AID MEASURES

#### For Medical Emergencies Call 1-888-324-7596 (24 hours/day)

INGESTION: Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.

EYE CONTACT: Flush thoroughly with water. Get medical attention if irritation persists.

SKIN CONTACT: Wash with soap and water. If irritation develops and persists, get medical attention. INHALATION: If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms

develop and persist.

#### SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

UNUSUAL FIRE/EXPLOSION HAZARDS: Contents under pressure. Aerosol containers may burst under fire conditions. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back.

#### SECTION 6 ACCIDENTAL RELEASE MEASURES

SPILL RESPONSE: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area. Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

#### SECTION 7 HANDLING AND STORAGE

HANDLING: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use with adequate ventilation. Keep away from heat, sparks and open flames. Wash thoroughly with soap and water after handling. Do not puncture or incinerate containers. Keep can away from electrical current or battery terminals. Electrical arcing can cause burn-through (puncture) which may result in flash fire, causing serious injury. Keep out of the reach of children.

STORAGE: Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol.

#### SECTION 8 EXPOSURE CONTROLE/PERSONAL PROTECTION

#### OCCUPATIONAL EXPOSURE LIMITS:

Aliphatic Petroleum Distillates	1200 mg/m3 TWA Manufacturer Recommended
Petroleum Base Oil	5 mg/m3 TWA ACGIH TLV
	10 mg/m3 STEL ACGIH TLV
Non-Hazardous Ingredients	None Established
Carbon Dioxide	5000 ppm TWA, 30,000 ppm STEL ACGIH TLV

#### The Following Controls are Recommended for Normal Consumer Use of this Product

Engineering Controls: Use in a well-ventilated area.

#### **Personal Protection:**

Eye Protection: Avoid eye contact. Safety glasses or goggles recommended.

Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.

Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended

**Engineering Controls:** Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.

**Personal Protection:** 

Eye Protection: Safety goggles recommended where eye contact is possible.

Skin Protection: Wear chemical resistant gloves.

**Respiratory Protection:** None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.

Work/Hygiene Practices: Wash with soap and water after handling.

#### SECTION 9 PHYSICAL DATA

APPEARANCE AND ODOR: Light amber liquid with a mild odor.

Freezing Point:	Not Applicable	Odor Threshold:	Not Determined
Boiling Point:	361 - 369°F (183 - 187°C)	Specific Gravity:	0.78 – 0.82 @ 60°F
Solubility in Water:	Insoluble	pH:	Not Applicable
Vapor Pressure:	95-115 PSI @ 70°F	Vapor Density:	Greater than 1
Percent Volatile:	70-75%	VOC:	533 grams/liter (65%)
Coefficient of Water/Oil	Not Determined	Kinematic	2.79-2.96cSt @ 100°F
Distribution:		Viscosity:	<u> </u>
Flash Point:	122°F (49°C) Tag Open Cup	Flammable Limits:	LEL: 0.6% UEL: 8.0%
	(concentrate)	(Solvent Portion)	
Pour Point:	-63°C (-81.4°F ) ASTM D-97	Explosion Impact:	None

#### SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable

INCOMPATIBILITY: Strong oxidizing agents. Avoid heat and open flames. Do not puncture or incinerate containers.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide.

#### SECTION 11 TOXICOLOGICAL INFORMATION

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

None of the components of this product is listed as a carcinogen or suspected carcinogen or is considered a reproductive hazard.

#### SECTION 12 ECOLOGICAL INFORMATION

No data is currently available.

#### SECTION 13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: If this product becomes a waste, it would be expected to meet the criteria of a hazardous waste based on flammability. However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Dispose in accordance with federal, state, and local regulations.

#### SECTION 14 TRANSPORT INFORMATION

DOT Surface Shipping Description: Consumer Commodity, ORM-D After 1/1/2014 UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)

Canadian TDG Classification: Limited Quantity

IMDG Code Hazard Classification: UN1950, Aerosols, 2.1.

#### SECTION 15 REGULATORY INFORMATION

#### U.S. FEDERAL REGULATIONS:

CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills as required under federal, state and local regulations.

#### SARA TITLE III:

Hazard Category For Section 311/312: Acute Health, Fire Hazard, Sudden Release of Pressure Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

#### CANADIAN REGULATIONS:

Canadian Environmental Protection Act: All of the ingredients are listed on the Canadian Domestic Substances List or exempt from notification

Canadian WHMIS Classification: Class B-5 (Flammable Aerosol). This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

#### SECTION 16 OTHER INFORMATION

## HMIS Hazard Rating: Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Physical Hazard – 0 (minimal hazard)

Revision Date: 03/27/14

Supersedes: 03/10/13

Prepared By: Industrial Health & Safety Consultants, Inc. 1-203-929-3473

This MSDS complies with OSHA guidelines set by 29 CFR 1910.1200 and the Canadian WHMIS regulations. The foregoing information has been compiled from sources believed to be accurate but is not warranted to be. Recipients are advised to confirm in advance of need that data is correct. Standards change without notice. It is the responsibility of the recipient to insure that their personnel have been notified of any changes which may affect them. The data provided on this MSDS are not meant to be used as specifications, only as guideline information as to the safe use of this product. User should refer to applicable laws before use.

N/D = Not Determined N/E = Not Established N/A = Not Applicable

1014100/No.0084102



## WHISTLE All Purpose Cleaner

HMIS NFPA		NFPA	Personal protective equipment
Health	0	0	None / Aucune / Ninguno
Fire Hazard	0	0	
Reactivity	0	0	

Version Number: 3

Preparation date:2010-07-30

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:

Product Code:

**Recommended use:** 

MSDS #:

WHISTLE All Purpose Cleaner

MS0500011 91249 Industrial/Institutional. Cleaning product.

#### Manufacturer, importer, supplier:

US Headquarters Diversey, Inc. 8310 16th St. Sturtevant, Wisconsin 53177-1964 Phone: 1-888-352-2249 MSDS Internet Address: www.diversey.com **Emergency telephone number:** 1-800-851-7145 (U.S.); 1-651-917-6133 (Int'l) Canadian Headquarters Diversey, Inc. - Canada, Inc. 2401 Bristol Circle Oakville, Ontario L6H 6P1 Phone: 1-800-668-3131

## 2. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Principal routes of exposure: Eye contact: Skin contact: Inhalation: Ingestion: Eye contact. Skin contact. Inhalation. Ingestion. None known. None known. None known. None known.

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS #	Weight %	LD50 Oral - Rat (mg/kg)	LD50 Dermal - Rabbit	LC50 Inhalation - Rat
2-butoxyethanol	111-76-2	0.1 - 1.5%	470	=220 mg/kg	=2.21 mg/L (4 h)
					=450 ppm (4 h)
Diethylene glycol monoethyl ether	111-90-0	1 - 5%	1920	=4200 µL/kg	>5240 mg/m ³ (4 h)

#### 4. FIRST AID MEASURES

Eye contact: Skin contact: Inhalation: Ingestion: Aggravated Medical Conditions:

Rinse with plenty of water. Rinse with plenty of water. No specific first aid measures are required. No specific first aid measures are required. None known

**5. FIRE-FIGHTING MEASURES** 

Suitable extinguishing media: Specific hazards: Unusual hazards: Specific methods: The product is not flammable. Extinguish fire using agent suitable for surrounding fire. None known. None known No special methods required

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Extinguishing media which must not be used for safety reasons: No information available

#### **6. ACCIDENTAL RELEASE MEASURES**

Personal precautions: Environmental precautions and clean-up methods: Not applicable. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Use a water rinse for final clean-up.

#### 7. HANDLING AND STORAGE

#### Handling:

Handle in accordance with good industrial hygiene and safety practice.FOR COMMERCIAL AND INDUSTRIAL USE ONLY. **Storage:** 

Protect from freezing. Keep tightly closed in a dry, cool and well-ventilated place. KEEP OUT OF REACH OF CHILDREN.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Engineering measures to reduce exposure:

No special ventilation requirements

#### **Personal Protective Equipment**

e conditions.
e conditions
e conditions.
e conditions.
hygiene and safety practice.

Ingredient(s)	CAS #	ACGIH	OSHA	Mexico
2-butoxyethanol	111-76-2	20 ppm (TWA)	Skin 50 ppm (TWA) 240 mg/m ³ (TWA)	75 ppm (STEL) 360 mg/m ³ (STEL) 26 ppm (TWA) 120 mg/m ³ (TWA)

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:Liquid Appearance:Liquid Specific gravity:1.001 Vapor density:No information available Boiling point/range:Not determined Decomposition temperature:Not determined Solubility:Completely Soluble Solubility in other solvents:No information available Partition coefficient (n-octanol/water):No information available Elemental Phosphorus:0% by wt. pH:10.84 Bulk density:No information available Evaporation RateNo information available Color:Clear Green Odor:Fresh Melting point/range:Not determined Autoignition temperature:No information available Density:8.34lbs/gal1.001Kg/L Flash point:>200°F>93.4°C Viscosity:No information available VOC:2% * Dilution pH:No information available.

Explosion limits:- upper:Not determined- lower:Not determined

* - Title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 8.5, Article 2, Consumer Products, Sections 94508

#### **10. STABILITY AND REACTIVITY**

Stability: Polymerization: Hazardous decomposition products: The product is stable Hazardous polymerization does not occur None reasonably foreseeable.

	11. TOXICOLOGICAL INFORMATION
Acute toxicity: Component Information:	Oral LD50 estimated to be greater than 5000 mg/kg; Dermal LD50 estimated to be > 2000 mg/kg See Section 3
Chronic toxicity:	None known
Specific effects Carcinogenic effects:	None known
Mutagenic effects:	None known
Reproductive toxicity:	None known
Target organ effects:	None known

#### **12. ECOLOGICAL INFORMATION**

**Environmental Information:** 

No data available

#### **13. DISPOSAL CONSIDERATIONS**

#### Waste from residues / unused products:

Dispose of according to all federal, state and local applicable regulations

#### **14. TRANSPORT INFORMATION**

DOT/TDG:Please refer to the Bill of Lading/receiving documents for up to date shipping information

#### **15. REGULATORY INFORMATION**

#### International Inventories

All components of this product are listed on the following inventories:U.S.A. (TSCA), Canada (DSL/NDSL).

#### **U.S. Regulations**

California Proposition 65: This product is not subject to the reporting requirements under California's Proposition 65

#### **RIGHT TO KNOW (RTK)**

Ingredient(s)	CAS #	MARTK:	NJRTK:	PARTK:	RIRTK:
Water	7732-18-5	-	-	-	-
2-butoxyethanol	111-76-2	Х	Х	Х	Х
Diethylene glycol monoethyl ether	111-90-0	-	Х	-	-

#### **CERCLA/ SARA**

Ingredient(s)	CAS #	Weight %	CERCLA/SARA RQ (lbs)	Section 302 TPQ (lbs)	Section 313
2-butoxyethanol	111-76-2	0.1 - 1.5%			Х
Diethylene glycol monoethyl ether	111-90-0	1 - 5%			Х

Ingredient(s)	CAA HAP	CAA ODS	CWA Priority Pollutants
2-butoxyethanol	Х		
Diethylene glycol monoethyl ether	Х		

#### SARA 311/312 Hazard Categories

Immediate:	-
Delayed:	-
Fire:	-
Reactivity:	-
Sudden Release of Pressu	re: -
Canada	

WHMIS hazard class:Non-controlled

Ingredient(s)	CAS #	NPRI
2-butoxyethanol	111-76-2	Х

#### **16. OTHER INFORMATION**

Reason for revision: Prepared by: Additional advice: Not applicable NAPRAC

Contains an added fragrance, see "Odor" heading in section 9 for specific description.

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according to ANSI Z400.1- 2004 and 29 CFR 1910.1200



## WINDEX® ORIGINAL GLASS CLEANER

Version 1.

Revision Date 01/06/2010

Print Date 02/01/2010

MSDS Number 350000014153 SITE_FORM Number 3000000000000010965.001

#### 1. PRODUCT AND COMPANY IDENTIFICATION

#### **Product information**

Trade name	:	WINDEX® ORIGINAL GLASS CLEANER
Use of the Substance/Mixture	:	Hard Surface Cleaner
Company	:	S.C. Johnson & Son, Inc. 1525 Howe Street Racine WI 53403-2236
Emergency telephone	:	24 Hour Transport & Medical Emergency Phone (866) 231- 5406 24 Hour International Emergency Phone (952) 852-4647

#### 2. HAZARDS IDENTIFICATION

Emergency Overview Appearance / Odor	:	blue / liquid / pleasant
Immediate Concerns	:	Avoid contact with skin, eyes and clothing.
Potential Health Effects Exposure routes	:	Eye, Skin, Inhalation, Ingestion.
Eyes	:	None known.
Skin	:	None known.
Inhalation	:	None known.
Ingestion	:	None known.
Aggravated Medical Condition	:	None known.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Weight percent
Water	7732-18-5	60.00 - 100.00

## 4. FIRST AID MEASURES

Eye contact

: Rinse with plenty of water. Get medical attention if irritation develops and persists.

## Material Safety Data Sheet ohnson according to ANSI Z400.1- 2004 and 29 CFR 1910.1200 FAMILY COMPANY WINDEX® ORIGINAL GLASS CLEANER Print Date 02/01/2010 Version 1. Revision Date 01/06/2010 MSDS Number 350000014153 SITE FORM Number 300000000000010965.001 Skin contact : Rinse with plenty of water. Inhalation Remove to fresh air. Ingestion No special requirements **5. FIRE-FIGHTING MEASURES** Suitable extinguishing : Alcohol foam, carbon dioxide, dry chemical, water fog media Specific hazards during fire : Container may melt and leak in heat of fire. fighting : Although this product has a flash point below 200 Deg F, it is Further information an aqueous solution containing an alcohol and does not sustain combustion. Standard procedure for chemical fires. Wear full protective clothing and positive pressure selfcontained breathing apparatus. Flash point 85 °C Method: ASTM D 56 185 °F Flash point Method: ASTM D 56 Lower explosion limit : Note: no data available Upper explosion limit : Note: no data available 6. ACCIDENTAL RELEASE MEASURES Personal precautions : Remove all sources of ignition. Methods for cleaning up Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Dike large spills. 7. HANDLING AND STORAGE Handling : KEEP OUT OF REACH OF CHILDREN AND PETS. Advice on safe handling Use only as directed. 2/7

according to ANSI Z400.1- 2004 and 29 CFR 1910.1200



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Advice on protection against fire and explosion	:	Keep away from heat and sources of ignition.
Storage		
Requirements for storage areas and containers	:	Keep container closed when not in use. Keep in a dry, cool and well-ventilated place. Do not freeze.
Other data	:	Stable under normal conditions.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### **Occupational Exposure Limits**

ACGIH or OSHA exposure limits have not been established for this product or reportable ingredients unless noted in the table above.

#### Personal protective equipment

#### Respiratory protection

Industrial setting	:	No personal respiratory protective equipment normally required.
Household setting	:	No personal respiratory protective equipment normally required.
Hand protection		
Industrial setting	:	not required under normal use
Household setting	:	not required under normal use
Eye protection		
Industrial setting	:	No special requirements.
Household setting	:	No special requirements.
Hygiene measures	:	Use only with adequate ventilation. Wash thoroughly after handling. Wear suitable protective clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Form

: liquid

according to ANSI Z400.1- 2004 and 29 CFR 1910.1200



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Color       :       blue         Odor       :       pleasant         pH       :       10.7         Boiling point       :       no data available         Freezing point       :       no data available         Flash point       :       85 °C         Flash point       :       85 °F         Hash point       :       185 °F         Method: ASTM D 56       Flash point       :         Evaporation rate       :       no data available         Flammability (solid, gas)       :       no data available         Lower explosion limit       :       no data available         Lower explosion limit       :       no data available         Vapour pressure       :       no data available         Vapour pressure       :       no data available         Vapour pressure       :       no data available         Viscosity, dynamic       :       no data available         Viscosity, dynamic       :       no data available         Viscosity, kinematic       :       no data available         Volatile Organic Compounds Califormia Air Resource Board - CARB) Total VOC (wt. %)       :       soluble         Votactiv CVC (wt. %)       :								
PH:10.7Boiling point:no data availableFreezing point:no data availableFreezing point: $85  {}^{\circ}C$ Method: ASTM D 56Flash point: $85  {}^{\circ}C$ Method: ASTM D 56Flash point:no data availableFlammability (solid, gas):no data availableFlammability (solid, gas):Does not sustain combustion.Autoignition temperature:no data availableLower explosion limit:no data availableLower explosion limit:no data availableUpper explosion limit:no data availableVapour pressure:no data availableVapour pressure:no data availableViscosity, kinematic:no data availabletoring Air Resource:no data availabletoring Air Resource:no data availabletoring Air Resource:None known.Materials to avoid:Strong oxidizing agentsHazardous decomposition:When exposed to fire, produces normal products of		Color	:	blue				
Provide the service of the service		Odor	:	pleasant				
Freezing point       : no data available         Flash point       : 85 °C Method: ASTM D 56         Flash point       : 185 °F Method: ASTM D 56         Evaporation rate       : no data available         Flammability (solid, gas)       : Does not sustain combustion.         Autoignition temperature       : no data available         Lower explosion limit       : no data available         Upper explosion limit       : no data available         Vapour pressure       : no data available         Density       : odata available         Vapour pressure       : no data available         Viscosity, dynamic       : soluble         Viscosity, kinematic       : no data available		рН	:	10.7				
Flash point       :       85 °C Method: ASTM D 56         Flash point       :       185 °F Method: ASTM D 56         Evaporation rate       :       no data available         Flammability (solid, gas)       :       Does not sustain combustion.         Autoignition temperature       :       no data available         Lower explosion limit       :       no data available         Upper explosion limit       :       no data available         Vapour pressure       :       no data available         Density       :       0.997 g/cm3 at 20 °C         Water solubility       :       soluble         Viscosity, dynamic       :       no data available         Viscosity, kinematic       :       no data available         Volatile Organic Compounds (California Air Resource Board – CARB)       :       0.5 % - does not include any applicable regulatory exemptions         10. STABILITY AND REACTIVITY       :		Boiling point	:	no data available				
Flash point       185 °F Method: ASTM D 56         Flash point       185 °F Method: ASTM D 56         Evaporation rate       ino data available         Flammability (solid, gas)       i         Autoignition temperature       ino data available         Lower explosion limit       ino data available         Upper explosion limit       ino data available         Vapour pressure       ino data available         Density       ino data available         Vapour pressure       ino data available         Vapour pressure       ino data available         Vater solubility       isoluble         Viscosity, dynamic       ino data available         Viscosity, kinematic       ino data available         Viscosity, kinematic       ino data available         Volatile Organic Compounds (California Air Resource Baard - CARB) Total VOC (wt. %)       i.o. 5% - does not include any applicable regulatory exemptions         Ito STABILITY AND REACTIVITY       i.one known.         Materials to avoid       i.s. Strong oxidizing agents         Hazardous decomposition       i. When exposed to fire, produces normal products of		Freezing point	:	no data available				
Method: ASTM D 56         Evaporation rate       :       no data available         Flammability (solid, gas)       :       Does not sustain combustion.         Autoignition temperature       :       no data available         Lower explosion limit       :       no data available         Upper explosion limit       :       no data available         Vapour pressure       :       no data available         Density       :       0.997 g/cm3 at 20 °C         Water solubility       :       soluble         Viscosity, dynamic       :       no data available         Viscosity, kinematic       :       no data available         Volatile Organic Compounds (California Air Resource Board - CARB) Total VOC (wt. %)       :       0.5 % - does not include any applicable regulatory exemptions         total VOC (wt. %)       :       None known.       Materials to avoid       :       Strong oxidizing agents         Hazardous decomposition       :       When exposed to fire, produces normal products of       :		Flash point	:					
Flammability (solid, gas)       :       Does not sustain combustion.         Autoignition temperature       :       no data available         Lower explosion limit       :       no data available         Upper explosion limit       :       no data available         Vapour pressure       :       no data available         Density       :       0.997 g/cm3 at 20 °C         Water solubility       :       soluble         Viscosity, dynamic       :       no data available         Viscosity, kinematic       :       no data available         Volatile Organic Compounds (California Air Resource Board – CARB) Total VOC (wt. %)       :       0.5 % - does not include any applicable regulatory exemptions <b>10. STABILITY AND REACTIVITY</b> :       None known.         Materials to avoid       :       Strong oxidizing agents         Hazardous decomposition       :       When exposed to fire, produces normal products of		Flash point	:					
Autoignition temperature       :       no data available         Lower explosion limit       :       no data available         Upper explosion limit       :       no data available         Vapour pressure       :       no data available         Density       :       0.997 g/cm3 at 20 °C         Water solubility       :       soluble         Viscosity, dynamic       :       no data available         Viscosity, kinematic       :       no data available         Volatile Organic Compounds (California Air Resource Board – CARB) Total VOC (wt. %)       :       0.5 % - does not include any applicable regulatory exemptions         10. STABILITY AND REACTIVITY       :       None known.         Materials to avoid       :       None known.         Materials to avoid       :       Strong oxidizing agents         Hazardous decomposition       :       When exposed to fire, produces normal products of		Evaporation rate	:	no data available				
Lower explosion limit       :       no data available         Upper explosion limit       :       no data available         Vapour pressure       :       no data available         Density       :       0.997 g/cm3 at 20 °C         Water solubility       :       soluble         Viscosity, dynamic       :       no data available         Viscosity, kinematic       :       no data available         Volatile Organic Compounds (California Air Resource Board – CARB) Total VOC (wt. %)       :       0.5 % - does not include any applicable regulatory exemptions         10. STABILITY AND REACTIVITY       :       None known.         Materials to avoid       :       None known.         Materials to avoid       :       Strong oxidizing agents         Hazardous decomposition       :       When exposed to fire, produces normal products of		Flammability (solid, gas)	:	Does not sustain combustion.				
Upper explosion limit:no data availableVapour pressure:no data availableDensity:0.997 g/cm3 at 20 °CWater solubility:solubleViscosity, dynamic:no data availableViscosity, kinematic:no data availableVolatile Organic Compounds (California Air Resource Board - CARB) Total VOC (wt. %):0.5 % - does not include any applicable regulatory exemptions10. STABILITY AND REACTIVITYConditions to avoid:None known.Materials to avoid:Strong oxidizing agentsHazardous decomposition:When exposed to fire, produces normal products of		Autoignition temperature	:	no data available				
Vapour pressure       : no data available         Density       : 0.997 g/cm3 at 20 °C         Water solubility       : soluble         Viscosity, dynamic       : no data available         Viscosity, kinematic       : no data available         Volatile Organic Compounds (California Air Resource Board – CARB) Total VOC (wt. %)       : 0.5 % - does not include any applicable regulatory exemptions         10. STABILITY AND REACTIVITY       Conditions to avoid       : None known.         Materials to avoid       : Strong oxidizing agents         Hazardous decomposition       : When exposed to fire, produces normal products of		Lower explosion limit	:	no data available				
Density       :       0.997 g/cm3 at 20 °C         Water solubility       :       soluble         Viscosity, dynamic       :       no data available         Viscosity, kinematic       :       no data available         Volatile Organic Compounds (California Air Resource Board – CARB) Total VOC (wt. %)       :       0.5 % - does not include any applicable regulatory exemptions <b>10. STABILITY AND REACTIVITY</b> Conditions to avoid       :       None known.         Materials to avoid       :       Strong oxidizing agents         Hazardous decomposition       :       When exposed to fire, produces normal products of		Upper explosion limit	:	no data available				
at 20 °C         Water solubility       :         Viscosity, dynamic       :         Viscosity, kinematic       :         Viscosity, kinematic       :         Volatile Organic Compounds (California Air Resource Board – CARB) Total VOC (wt. %)       :       0.5 % - does not include any applicable regulatory exemptions         10. STABILITY AND REACTIVITY       :       None known.         Materials to avoid       :       None known.         Hazardous decomposition       :       When exposed to fire, produces normal products of		Vapour pressure	:	no data available				
Water solubility       : soluble         Viscosity, dynamic       : no data available         Viscosity, kinematic       : no data available         Volatile Organic Compounds (California Air Resource Board – CARB) Total VOC (wt. %)       : 0.5 % - does not include any applicable regulatory exemptions         10. STABILITY AND REACTIVITY       Conditions to avoid       : None known.         Materials to avoid       : Strong oxidizing agents         Hazardous decomposition       : When exposed to fire, produces normal products of		Density	:	0.997 g/cm3				
Viscosity, kinematic       : no data available         Volatile Organic Compounds (California Air Resource Board – CARB) Total VOC (wt. %)       : 0.5 % - does not include any applicable regulatory exemptions         10. STABILITY AND REACTIVITY       Conditions to avoid       : None known.         Materials to avoid       : Strong oxidizing agents         Hazardous decomposition       : When exposed to fire, produces normal products of		Water solubility	:					
Volatile Organic Compounds (California Air Resource Board – CARB) Total VOC (wt. %)       : 0.5 % - does not include any applicable regulatory exemptions <b>10. STABILITY AND REACTIVITY</b> Conditions to avoid       : None known.         Materials to avoid       : Strong oxidizing agents         Hazardous decomposition       : When exposed to fire, produces normal products of		Viscosity, dynamic	:	no data available				
(California Air Resource Board – CARB) Total VOC (wt. %)       exemptions         10. STABILITY AND REACTIVITY       Conditions to avoid         Conditions to avoid       :         None known.         Materials to avoid       :         Strong oxidizing agents         Hazardous decomposition       :		Viscosity, kinematic	:	no data available				
Conditions to avoid: None known.Materials to avoid: Strong oxidizing agentsHazardous decomposition: When exposed to fire, produces normal products of		(California Air Resource Board – CARB)	:	, , , , , , , , , , , , , , , , , , , ,				
Materials to avoid       : Strong oxidizing agents         Hazardous decomposition       : When exposed to fire, produces normal products of	10.	STABILITY AND REACTIVITY	r					
Hazardous decomposition : When exposed to fire, produces normal products of		Conditions to avoid	:	None known.				
		Materials to avoid	:	Strong oxidizing agents				
4/7		Hazardous decomposition	:	When exposed to fire, produces normal products of				
	4/7							

Material Safety Data Sheet	
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according to ANSI Z400.1- 2004 and 29 CFR 1910.1200



products combustion. Hazardous reactions : Stable	int Date 02/01/2010 SDS Number 350000014153 TE_FORM Number 000000000000000000000000000000000000
Revision Date 01/06/2010       M         products       combustion.         Hazardous reactions       : Stable         11. TOXICOLOGICAL INFORMATION         Acute oral toxicity       : LD50 estimated > 5,000 mg/kg         Acute inhalation toxicity       : LC50 estimated > 2.58 mg/l         Acute dermal toxicity       : no data available         Chronic effects Carcinogenicity       : no data available         Mutagenicity       : no data available         Reproductive effects       : no data available         Teratogenicity       : no data available	SDS Number 350000014153 TE_FORM Number
products       combustion.         Hazardous reactions       :       Stable <b>1.TOXICOLOGICAL INFORMATION</b> Acute oral toxicity       :       LD50 estimated > 5,000 mg/kg         Acute inhalation toxicity       :       LC50 estimated > 2.58 mg/l         Acute dermal toxicity       :       no data available         Chronic effects Carcinogenicity       :       no data available         Mutagenicity       :       no data available         Reproductive effects       :       no data available         Teratogenicity       :       no data available	TE_FORM Number
Hazardous reactions:Stable <b>INTOXICOLOGICAL INFORMATION</b> Acute oral toxicity:Acute oral toxicity:Acute oral toxicity:Acute inhalation toxicity:Acute dermal toxicity:Acute dermal toxicity:Acute dermal toxicity:Chronic effectsCarcinogenicity:Mutagenicity:Reproductive effects:Reproductive effects:Teratogenicity:No data availableTeratogenicity:No data availableTeratogenicity:No data availableTeratogenicity:No data availableTeratogenicity:No data availableTeratogenicity:No data availableTeratogenicity:StableTeratogenicity:StableTeratogenicity:StableTeratogenicity:StableTeratogenicity:StableTeratogenicity:StableTeratogenicity:StableStableStableStableStableStableStableStableStableStableStableStableStableStableStableStableStableStableStableStable<	
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Chronic effects Carcinogenicity:no data availableMutagenicity:no data availableReproductive effects:no data availableTeratogenicity:no data available	
Carcinogenicity:no data availableMutagenicity:no data availableReproductive effects:no data availableTeratogenicity:no data available	
Reproductive effects : no data available Teratogenicity : no data available	
Teratogenicity : no data available	
Sensitisation : Not known to be a sensiti	
	zer.
2. ECOLOGICAL INFORMATION	
Ecotoxicity effects : no data available	
3. DISPOSAL CONSIDERATIONS	
	deral, Provincial and State nicipal ordinances regarding
Household setting : Consumer may discard en where facilities exist.	npty container in trash, or recycle

according to ANSI Z400.1- 2004 and 29 CFR 1910.1200



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### 14. TRANSPORT INFORMATION

#### Land transport

	lian TDG Surface Transportation:
UN-Number Proper shipping name	None. not regulated
Class:	None.
Packaging group	None.
Sea transport	
IMDG:	
UN-Number:	None.
Packaging group:	None.
Proper shipping name	not regulated
Class:	None.
Air transport	
ICAO/IATA:	
Class:	None.
Packaging group:	None.
Proper shipping name	not regulated
UN/ID No.:	None.
REGULATORY INFORMA	TION
<b>REGULATORY INFORMA</b> Notification status	<ul> <li>All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.</li> </ul>
	: All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA)
Notification status	<ul> <li>All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.</li> <li>All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).</li> <li>This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other</li> </ul>
Notification status	<ul> <li>All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.</li> <li>All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).</li> <li>This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.</li> <li>This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS</li> </ul>
Notification status Notification status California Prop. 65	<ul> <li>All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.</li> <li>All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).</li> <li>This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.</li> <li>This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products</li> </ul>
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Health	0	
Flammability	2	
Reactivity	0	
NFPA Ratings		
Health	0	
Fire	2	
Reactivity	0	
Special		

Further information

This document has been prepared using data from sources considered to be technically reliable. It does not constitute a warranty, expressed or implied, as to the accuracy of the information contained herein. Actual conditions of use are beyond the seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

Prepared by:	SC Johnson Global Safety Assessment &	
	Regulatory Affairs (GSARA)	