Waste Management Plans



Gravel Quarry KM 518, Highway 1

Prepared By:

Nogha Enterprises Limited Management January 1, 2018

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1.0 INTRODUCTION

The project/scope of work will be to develop a gravel quarry pit located at Km 518, Hwy

#1, approximately 50.0 kilometers north/west of Fort Simpson, NWT. The gravel quarry is an existing quarry and is a multi-user pit.

The proposed quarry area from the DOT highway easement is approximately 2,000 meters along an existing access road south east of center line. The proposed area will be 100 meters in length and 40 meters in width with a combined area of 0.4 hectares. The site has been cleared previously. The grubbing/stripping excavated materials will be stock piled adjacent the perimeters of the outside edges for future pit restoration; upon completion of the quarrying operation.

No camp or fuel storage tanks will be utilized for the duration of the permit. Refueling of the heavy equipment on site i.e. Loaders, Crawler Cats, etc. will be carried out by Rowes staff utilizing pickup trucks equipped with tidy tanks (500 It capacity). A spill plan and an emergency plan have been generated for this project and will be implemented when it commences.

This Hazardous Waste Management Plan deals specifically with procedures and policies for the safe and responsible handling, storage and disposal of hazardous waste materials, which have served their original purpose and are scheduled for disposal as per the Final Closure and Reclamation Plan for Nogha Enterprises Limited. It provides detailed background information on the handling of hazardous wastes. It details the operational requirements to ensure that the facility is maintained in an environmentally responsible manner, and outlines the environmental monitoring and reporting required by the regulatory agencies. This document is submitted to the Mackenzie Valley Land and Water Board as a requirement of the LUP license permit.

1.1 Background

The Kilometer 518 Quarry site development is a typical quarry development and is a multi-user site. Nogha Enterprises Ltd. of Fort Simpson has an existing LUP permit and Quarry permit adjacent the site Nogha Enterprises Limited is applying for.

Legislation and Guidelines

The Km 518 quarry site and access road will be under a Land Use permit with a term of 5 years and a further 2-year extension if applicable.

The principal applicable legislation, dealing with specific issues related to hazardous waste management and the environment, is the NWT Environmental Protection Act (EPA). Other relevant legislation includes the federal Northwest Territories Waters Act, Fisheries Act and the Transportation of Dangerous Goods Act and Regulation (TDGR).

The management of specific hazardous materials is addressed by the federal Canadian Environmental Protection Act for Polychlorinated Biphenyl's (PCB's), by The Explosives Act and by the Atomic Energy Control Board (AECB) for the safe use and storage of radioactive materials.

The management of hazardous materials is subject to legislation intended to protect the health and safety of workers and the public, such as the NWT Safety Act, Occupational Health and

Safety Regulations, the Work Site Hazardous Materials Information System Regulations (WHMIS), the National Fire Code and the NWT Public Health Act

Under the authority of the Environmental Protection Act, the NWT Department of Resources, Wildlife and Economic Development (RWED) has produced a series of 'Environmental Guidelines' for the management of specific hazardous wastes commonly produced by NWT industries.

The Environmental Guidelines for the management of waste solvents, batteries, antifreeze, asbestos, paint and ozone depleting substances have been referred to during the preparation of this plan.

These guidelines form the basis of management programs developed at several similar sites in the NWT. The Environmental Guideline for the General Management of Hazardous Waste in the NWT provides definitions of terms used in the EPA and Environmental Guidelines and describes the principles of acceptable waste management practice. The following definitions are particularly important to this document.

Hazardous Waste in the NWT provides definitions of terms used in the EPA and Environmental Guidelines and describes the principles of acceptable waste management practice. The following definitions are particularly important to this document.

1.2.1 Hazardous Waste

A contaminant which is a dangerous goods that is no longer used for its original purpose and is intended for recycling, treatment, disposal or storage.

A 'hazardous waste' does not include a contaminant that is:

- a) household in origin;
- b) included in class 1 (explosives) or class 7 (radioactive materials) of the TDGR;
- c) exempted as a small quantity;
- d) an empty container; or,

e) intended for disposal in a sewage system or by land filling that meets the applicable standards set out in Schedules I, III or IV of the Guideline for Industrial Waste Discharges in the NWT.

(* 'dangerous good' as defined in the TDGR).

1.2.2 Empty Container

A container that has been emptied, to the greatest extent possible, using regular handling procedures, but its contents shall not exceed 1% of the container's original capacity or 2 liters, whichever is less. This does not include containers which previously contained mercury, or Class 2.3, 5.1 or 6.1 materials of the TDGR.



1.2.3 Small Quantity

Hazardous waste that is generated in an amount that is less than 5 kilograms per month if a solid, or 5 liters per month if a liquid; and where the total quantity accumulated at any one time does not exceed 5 kilograms or 5 liters. This does not apply to wastes that are mercury or in Classes 2.3, 5.1 or 6.1 of the TDGR. These wastes must be generated in an amount less than 1 kilogram per month if a solid or 1 liter per month if a liquid; and where the total quantity accumulated at any one time does not exceed 1 kilogram or 1 liter.

2.0 WASTE MANAGEMENT PRINCIPLES

The Environmental Guideline for the General Management of Hazardous Waste in the NWf describes the responsibilities of hazardous waste generators and states principles for the storage and management of these wastes. The following principles will be incorporated into the mine's hazardous waste management programs.

2.1 Responsibilities

The responsibility for proper waste management rests with the generator and should be considered part of the cost of doing business.

2.2 Waste Storage

The storage of hazardous waste is not an acceptable long-term waste management solution.

2.3 Waste Reduction

Avoiding the creation of pollutants and waste can be more effective in protecting the environment than treating them or cleaning them up after they have been created". (Statement of Canadian Council of Ministers of the Environment).

The waste management program will attempt to minimize hazardous waste production by applying the increasingly recognized principles of Reducing the use of hazardous materials, reusing materials whenever possible, recycling materials and Recovering value from used materials (the "four R's)

Hazardous wastes will never be used for this quarry project. However, opportunities to recycle hazardous materials have become more widely available in recent years as new regulations have been developed, and customers have demanded such services from product suppliers and independent service industries. New recycling opportunities for hazardous waste will continue to be investigated.

3.0 WASTE MANAGEMENT FACILITIES

No waste materials will be stored at the Quarry site including waste oil, oil containers, soiled rags, drums, etc. rather, consumables and empty containers will be taken to site and from site daily.

4.0 PROCEDURES FOR MANAGING SPECIFIC WASTES

This section of the plan describes the general procedures and principles that are followed by mine personnel in handling and storing hazardous wastes. These general procedures are supported by the advice of the mine Environmental and Reclamation Manager and the other supervisors. Programs for

management of emergencies involving specific wastes have been developed as part of the Spill Contingency Procedures for Nogha Enterprises Limited Ltd.

Programs for handling, disposal or recycling of other hazardous wastes will be developed as needed. The sub-sections listed below deal with specific hazardous wastes that may be encountered during the operational phase of this project.

4.1 Waste Oil

Waste oil products are stored in lube Cubes" provided by the petrochemical products supplier and stationed at Noghas mechanical shop located in Fort Simpson. Waste material is removed from the cubes by the supplier, as required. Other waste types, such as antifreeze or solvents will not be stored in the same container as waste oils.

4.2 Used Oil Filters

Any used oil filters will be drained and deposited in a non-hazardous waste disposal container and hauled back to Noghas main mechanical shop in Fort Simpson. The facility deals and has the required frame work to deal with this bi-product.

4.3 Petrochemical Products Containers

Used containers, typically 12 or 25-liter plastic pails, are drained, washed, flattened and deposited at the non-hazardous waste disposal site. Containers larger than 20 liters are removed from site and sent to an approved recycling facility for disposal.

4.4 Waste Antifreeze

Waste antifreeze is placed into empty containers and hauled back to Rowes mechanical shop facility in Fort Simpson who deal with this bi-product in waste containers and dispose of it accordingly to the regulatory requirements.

4.5 Waste Solvents

Solvents such as Varsol are used to remove grease and oil from engine components and other machinery. Waste solvents are temporarily stored in steel or plastic drums, fitted with stoppers, Waste solvents are placed into empty containers and hauled back to Noghas mechanical shop facility in Fort Simpson who deal with this bi- product in waste containers and dispose of it accordingly to the regulatory requirements.

4.6 Waste Batteries

Used lead-acid batteries are stored at the designated Hazardous Waste Storage Site (see Sections 3.4 and 3.6). Battery fluid, which may contain dissolved contaminants, is not drained. The batteries are provided with drip trays or contained in heavy gauge metal or plastic drums and covered with plastic sheeting to protect them from precipitation. Accumulated waste batteries are sent to an approved recycling facility.



Tires

The work site at the quarry is not equipped to change tires on site. This type of work is handled by Rowe's mechanical facility in Fort Simpson. For the purposes of this project, used tires are not a waste that is generated on site.

Hydrocarbon Contaminated Absorbents

Oily rags from the maintenance shops, and used spill response materials, such as fiber pads or granular absorbents ('Floor Dry') are placed in steel drums and temporarily stored at the Hydrocarbon Storage Site (see section 3.5). Accumulated contaminated absorbents are sent to an approved recycling facility for disposal.

Polychlorinated Biphenyls (PCB's) No PCB's will be encountered for this project.

4.7 Radioactive Materials

There will be no radioactive substances on site and there is no reason to believe that any will be encountered during the full disposition of this project.

4.8 Explosives

No explosive products will be used for the duration of this project.

4.9 Medical Wastes

Deposition of medical wastes is not applicable to the quarrying operations and no bi- products will be encountered.

4.10 Animal Carcasses

Deposition of animal carcasses or any portion thereof; if a dead animal or a carcass is encountered, the process involves notifying ENR, Renewable Resources at the community level to deal with.

4.11 Asbestos

Deposition of asbestos wastes is not applicable to the quarrying operations and no bi- products will be encountered.

4.12

Deposition of the following wastes in the either the hazardous waste disposal site or the non-hazardous waste disposal site at quarry site is prohibited:

- Car and truck bodies
- Empty fuel drums
- Oily wastes or wastes with hydrocarbon odors
- Vacuum truck wastes

Potable Water and Sewage

All potable water will be trucked in from the water treatment facility from the Village of Fort Simpson. No sewage or 'gray water' will be created.



SAFETY DATA SHEET

Synthetic SAE 10W-30 Heavy Duty Diesel Oil

Section 1. Identification Date Version		:	11/15/2016 6	
GHS product identifier	: Synthetic SAE 10W-30 Heavy Duty Diesel Oil			
Code	: ACD			
Product type	: Liquid.			
Identified uses	: Lubricating Oil. Not to be misted.			
Manufacturer	: AMSOIL INC. One AMSOIL Center Superior, WI 54880 Tel: +1 715-392-7101			
Initial Supplier (Canada)	: AMSOIL INC. Bordner, Ladner, Gervais Scotia Plaza, 40 King St W Toronto, ON, Canada M5H 3Y4 Tel: +1 416-367-6547			
Emergency telephone number (with hours of operation)	: CHEMTREC: Within USA and Canada: 1-800-424-9300; Outside USA and Canada: +1 703-741-5970 (collect calls ac (24/7)	ccepted)		

Section 2. Hazards identification

(PHNOC)

OSHA/HCS status	 This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: AQUATIC HAZARD (ACUTE) - Category 3 AQUATIC HAZARD (LONG-TERM) - Category 3
GHS label elements	
Signal word	: No signal word.
Hazard statements	: Harmful to aquatic life with long lasting effects.
Precautionary statements	
Prevention	: Avoid release to the environment.
Response	: Not applicable.
Storage	: Not applicable.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise clas	ified (HNOC)
Physical hazards not otherwise classified	: None known.

Health hazards not otherwise classified (HHNOC) : None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	Mixture
Other means of		Not available.
identification		

CAS number/other identifiers		
CAS number	:	Not applicable,
Product code	:	ACD
	_	

Ingredient name	%	CAS number
bis(Nonylphenyl)amine	1 - 5	36878-20-3
Zinc Dialkyldithiophosphate	1 - 5	84605-29-8
Diphenylamine	0.1 - 1	122-39-4
Alkylated phenol	0 - 0.1	121158-58-5

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 necessar	<u>y first aid measures</u>
Eye contact	 Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	 Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion	: Wash out mouth with water. Remove dentures if any. 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. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
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Most important symptoms/effects, acute and delayed

Potential acute health effe	cts
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.
Over-exposure signs/sym	ptoms
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 me	dical attention and special treatment needed. if necessary
Notes to physician	 In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: None known.
Specific hazards arising from the chemical	: In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
Special protective actions for fire-fighters	: 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.
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, protect	tiv	e equipment and emergency procedures
For non-emergency personnel	:	Put on appropriate personal protective equipment.
For emergency responders	:	If specialized 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). Water polluting material. May be harmful to the environment if released in large quantities.
Methods and materials for co	ont	ainment and cleaning up
Spill	:	Stop leak if without risk. Move containers from spill area. Approach 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

Section 7. Handling and storage

Precautions for safe handling	
Protective measures :	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Avoid contact with used product. Do not reuse container.

(see Section 13). Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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.
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

Under conditions which may generate mists, the following additional exposure limits are recommended: ACGIH TLV TWA: 5 mg/m³; STEL: 10 mg/m³.

United States

Ingredient name	Exposure limits
Diphenylamine	ACGIH TLV (United States, 3/2015). TWA: 10 mg/m ³ 8 hours. NIOSH REL (United States, 10/2013). TWA: 10 mg/m ³ 10 hours.

Canada

Occupational exposure limits

None.

Appropriate engineering controls	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.
Individual protection measures	
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	 Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance	
Physical state	: Liquid.
Color	: Brown.
Odor	: Mild hydrocarbon.
Odor threshold	: Not available.
рН	: Not available.
Melting point	: -37°C (-34.6°F)
Boiling point	: Not available.
Flash point	: Open cup: 226°C (438.8°F) [Cleveland.]
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	: 0.8571
Solubility	: Not available.
Partition coefficient: n- octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic: 0.113 cm²/s (11.3 cSt) (100°C) Kinematic: 0.735 cm²/s (73.5 cSt) (40°C)
Volatility	: Not available.

ACD

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 effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Zinc Dialkyldithiophosphate Diphenylamine	LD50 Oral LD50 Dermal LD50 Oral	Rat Rabbit Rat	3.2 g/kg >5000 mg/kg 1120 mg/kg	-

Irritation/Corrosion

There is no data available.

Sensitization

There is no data available.

Carcinogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

Name	Category	Target organs
Diphenylamine	Category 2	Not determined

Aspiration hazard

There is no data available.

Information on the likely : Dermal contact. Eye contact. Inhalation. Ingestion.

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	sic	al. 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 effect	ts	and also chronic effects from short and long term exposure
Short term exposure		
Potential immediate	:	No known significant effects or critical hazards.
		No longue simplificant officity or without because
Potential delayed effects	÷	No known significant effects of critical nazaros,
Long term exposure		No known simplifiaant offerte er esitiaal bereade
effects	•	No known significant effects of critical nazards.
Potential delayed effects	:	No known significant effects or critical hazards.
Potential chronic health effe	ct	s
General	:	No known significant effects or critical hazards.
Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
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.
*		

Numerical measures of toxicity

Acute toxicity estimates				
Route	ATE value			
Oral	230880.2 mg/kg			

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Diphenylamine	Acute EC50 2.17 mg/L Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute EC50 0.31 mg/L Fresh water Acute LC50 2.2 ppm Fresh water Chronic NOEC 0.37 mg/L Fresh water	Daphnia - Daphnia magna Fish - Oncorhynchus mykiss Algae - Pseudokirchneriella subcapitata - Exponential growth phase	48 hours 96 hours 72 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
bis(Nonylphenyl)amine	3.64 to 7.02	1730	high
Zinc Dialkyldithiophosphate	0.56	-	low
Diphenylamine	3.5	151.36	low
Alkylated phenol	6.1	1601	high
Mobility in soil			

Soil/water partition coefficient (Koc)	: There is no data available.
Mobility	: There is no data available.
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. Care should be taken when handling empty containers that have not been cleaned or rinsed out. 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	TDG	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-		-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

AERG : Not applicable

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according : Not available. to Annex II of MARPOL and the IBC Code

Section 15. Regulatory information

U.S. Federal regulations	: United States inventory (TSCA 8b): All components are listed or exempted. Clean Water Act (CWA) 307: Zinc Dialkyldithiophosphate
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	: Not listed
Clean Air Act Section 602 Class I Substances	: Not listed
Clean Air Act Section 602 Class II Substances	: Not listed
DEA List I Chemicals (Precursor Chemicals)	: Not listed
DEA List II Chemicals (Essential Chemicals)	: Not listed
SARA 302/304	
Composition/information	on ingredients
No products were found.	
SARA 304 RQ	: Not applicable.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Zinc Dialkyldithiophosphate	No.	No.	No.	Yes.	No.
Diphenylamine	No.	No.	No.	Yes.	Yes.
Alkylated phenol	No.	No.	No.	Yes.	Yes.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Zinc Dialkyldithiophosphate	84605-29-8	1 - 5
Supplier notification	Zinc Dialkyldithiophosphate	84605-29-8	1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts	: None of the components are listed.
New York	: None of the components are listed.
New Jersey	: The following components are listed: Zinc Dialkyldithiophosphate
Pennsylvania	: None of the components are listed.
California Prop. 65	
No products were found.	
Canada	

Canadian lists	
Canadian NPRI	: The following components are listed: Zinc Dialkyldithiophosphate
CEPA Toxic substances	: None of the components are listed.
Canada inventory	: All components are listed or exempted.

Section 16. Other information

History		
Date of issue mm/dd/yyyy	:	11/15/2016
Date of previous issue	:	06/15/2014
Version	:	6
Prepared by	:	AMSOIL INC.

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.

11/11

56			Tel: 514-956-7503 Fax: 514-956-7504 Internet: www.megs.ca E-mail: support@megs.ca
Montreal	St-Laurent	Tel : 514-956-7503	Fax : 514-956-7504
Ottawa	Nepean	Tel : 613-226-4228	Fax : 613-226-4229
Quebec	Quebec	Tel : 418-834-7447	Fax : 418-834-3774
	BENZENE- MATERIA	L SAFETY DAT	A SHEET

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24 Hour EMERGENCY CONTACT

U.S- CHEMTREC 1-800-424-9300

CANADA- CANUTEC 613-996-6666

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION of Contents

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Matheson Tri-Gas, Inc.

The telephone numbers listed below are emergency numbers, please contact your <u>local</u> <u>branch</u> for routine inquiries.

USA 959 Route 46 East Parsippany, New Jersey 07054-0624 USA Phone: 973-257-1100

CANADA

530 Watson Street Whitby, Ontario L1N 5R9 Canada Phone: 905-668-3570

SUBSTANCE: BENZENE

SYMBOL: C₆H₆

TRADE NAMES/SYNONYMS:

BENZOL; CYCLOHEXATRIENE; BENZOLE; PHENE; PYROBENZOL; PYROBENZOLE; CARBON OIL; COAL TAR NAPHTHA; PHENYL HYDRIDE; BENZOLENE; BICARBURET OF HYDROGEN; COAL NAPHTHA; MOTOR BENZOL; ANNULENE; (6)ANNULENE; RCRA U019; STCC 4908110; UN 1114; C6H6; MAT02610; RTECS CY1400000

CHEMICAL FAMILY: hydrocarbons, aromatic

CREATION DATE: Jan 24 1989 REVISION DATE: Mar 16 1999

2. COMPOSITION, INFORMATION ON INGREDIENTS Contents

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COMPONENT: BENZENE

CAS NUMBER: 71-43-2

EC NUMBER (EINECS): 200-753-7

PERCENTAGE: >99

COMPONENT: THIOPHENE

CAS NUMBER: 110-02-1

EC NUMBER (EINECS): 203-729-4

PERCENTAGE: 0.00010

3. HAZARDS IDENTIFICATION

Up to Table of Contents

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=3 REACTIVITY=0

WHMIS CLASSIFICATION: BD2

EC CLASSIFICATION (ASSIGNED): F Highly Flammable T Toxic Carcinogen Category 1

R 11-45-48/23/24/25

EC Classification may be inconsistent with independently-researched data.



EMERGENCY OVERVIEW: Color: colorless to yellow

Physical Form: liquid

Major Health Hazards: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, cancer hazard (in humans)

Physical Hazards: Flammable liquid and vapor. Vapor may cause flash fire.

POTENTIAL HEALTH EFFECTS:

INHALATION:

Short Term Exposure: irritation, ringing in the ears, nausea, vomiting, chest pain, difficulty breathing, irregular heartbeat, headache, drowsiness, symptoms of drunkenness, disorientation, blurred vision, lung congestion, blood disorders, paralysis, convulsions, coma

Long Term Exposure: hearing loss, visual disturbances, reproductive effects, brain damage, cancer

SKIN CONTACT: Short Term Exposure: irritation, blisters Long Term Exposure: tingling sensation

EYE CONTACT:

Short Term Exposure: irritation Long Term Exposure: no information on significant adverse effects

INGESTION:

Short Term Exposure: nausea, vomiting, chest pain, headache, drowsiness, symptoms of drunkenness, disorientation, visual disturbances, lung congestion, paralysis, convulsions, coma

Long Term Exposure: impotence, cancer

CARCINOGEN STATUS: OSHA: Y NTP: Y IARC: Y

4. FIRST AID MEASURES Up to Table of Contents

INHALATION:

When safe to enter area, remove from exposure. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Keep warm and at rest. Get medical attention immediately.

SKIN CONTACT:

Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention, if needed.

EYE CONTACT:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

INGESTION:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

NOTE TO PHYSICIAN:

For inhalation, consider oxygen. For ingestion, consider gastric lavage.

5. FIRE FIGHTING MEASURES Up to Table of Contents

FIRE AND EXPLOSION HAZARDS:

Severe fire hazard. Moderate explosion hazard. Vapor/air mixtures are explosive. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.

EXTINGUISHING MEDIA:

regular dry chemical, carbon dioxide, water, regular foam

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING:

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. 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: Evacuation radius: 800 meters (1/2 mile). Water may be ineffective.

FLASH POINT:

12 F (-11 C) (CC) LOWER FLAMMABLE LIMIT: 1.2% UPPER FLAMMABLE LIMIT: 7.8% AUTOIGNITION: 928 F (498 C) FLAMMABILITY CLASS (OSHA): IB

6. ACCIDENTAL RELEASE MEASURES

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AIR RELEASE:

Reduce vapors with water spray. Stay upwind and keep out of low areas.

SOIL RELEASE:

Dig holding area such as lagoon, pond or pit for containment. Dike for later disposal. Absorb with sand or other non-combustible material.

WATER RELEASE:

Cover with absorbent sheets, spill-control pads or pillows. Apply detergents, soaps, alcohols or another surface active agent. Collect with absorbent into suitable container. Absorb with activated carbon. Remove trapped material with suction hoses. Collect spilled material using mechanical equipment. Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry. Reportable Quantity (RQ): Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE

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Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. Protect from physical damage. Store outside or in a detached building. Store with flammable liquids. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION Contents

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EXPOSURE LIMITS: BENZENE:

1 ppm OSHA TWA 5 ppm OSHA STEL 15 minute(s) 0.5 ppm OSHA action level 0.5 ppm (1.6 mg/m3) ACGIH TWA 2.5 ppm (8 mg/m3) ACGIH STEL 0.1 ppm (0.32 mg/m3) NIOSH recommended TWA 8 hour(s) 1 ppm (3.2 mg/m3) NIOSH recommended ceiling 15 minute(s)

VENTILATION: Provide local exhaust or process enclosure ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. 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 gloves. OSHA REGULATED SUBSTANCES: U.S. OSHA 29 CFR 1910.1028.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

10 ppm

Any air-purifying respirator with a full facepiece and an organic vapor canister. 50 ppm

Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s). Any air-purifying respirator with a full facepiece and a canister providing protection against this substance.

100 ppm

Any powered, air-purifying respirator with a full facepiece and organic vapor cartridge(s). 1000 ppm

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

For Unknown Concentrations or Immediately Dangerous to Life or Health -Any self-contained breathing apparatus that has a full facepiece and is operated in a pressuredemand or other positive-pressure mode.

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Escape -

Any air-purifying respirator with a full facepiece and an organic vapor canister. Any self-contained breathing apparatus with a full facepiece.

9. PHYSICAL AND CHEMICAL PROPERTIES

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PHYSICAL STATE: liquid

COLOR: coloriess to veliow

ODOR: distinct odor

MOLECULAR WEIGHT: 78.11

MOLECULAR FORMULA: C6-H6

BOILING POINT: 176 F (80 C)

FREEZING POINT: 43 F (6 C)

VAPOR PRESSURE: 75 mmHg @ 20 C

VAPOR DENSITY (air=1): 2.8

SPECIFIC GRAVITY (water=1): 0.8765 @ 20 C

WATER SOLUBILITY: 0.18% @ 25 C

PH: Not available

VOLATILITY: 100%

ODOR THRESHOLD: 4.68 ppm

EVAPORATION RATE: 5.1 (butyl acetate=1)

VISCOSITY: 0.6468 cP @ 20 C

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: acetone, alcohol, carbon disulfide, acetic acid, carbon tetrachloride, chloroform, ether, oils

10. STABILITY AND REACTIVITY

Up to Table of Contents

REACTIVITY:

Stable at normal temperatures and pressure.

CONDITIONS TO AVOID:

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers.

INCOMPATIBILITIES:

acids, bases, halogens, oxidizing materials, metal salts

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: oxides of carbon

POLYMERIZATION:

Will not polymerize.

11. TOXICOLOGICAL INFORMATION

Up to Table of Contents

BENZENE:

IRRITATION DATA:

15 mg/24 hour(s) open skin-rabbit mild; 20 mg/24 hour(s) skin-rabbit moderate; 88 mg eyes-rabbit moderate; 2 mg/24 hour(s) eyes-rabbit severe

TOXICITY DATA:

10000 ppm/7 hour(s) inhalation-rat LC50; >9400 ul/kg skin-rabbit LD50; 930 mg/kg oral-rat LD50

CARCINOGEN STATUS:

OSHA: Carcinogen; NTP: Known Human Carcinogen; IARC: Human Sufficient Evidence, Animal Sufficient Evidence, Group 1; ACGIH: A1 -Confirmed Human Carcinogen; EC: Category 1

LOCAL EFFECTS: Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Highly Toxic: dermal absorption

Moderately Toxic: ingestion Slightly Toxic: inhalation

TARGET ORGANS:

immune system (blood), central nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: blood system disorders, immune system disorders or allergies

TUMORIGENIC DATA: Available.

MUTAGENIC DATA: Available.

REPRODUCTIVE EFFECTS DATA: Available.

ADDITIONAL DATA:

May cross the placenta. Alcohol may enhance the toxic effects. Interactions with drugs may occur.

12. ECOLOGICAL INFORMATION

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ECOTOXICITY DATA:

FISH TOXICITY:

9200 ug/L 96 hour(s) LC50 (Mortality) Rainbow trout, donaldson trout (Oncorhynchus mykiss)

INVERTEBRATE TOXICITY:

10000 ug/L 48 hour(s) EC50 (Immobilization) Water flea (Daphnia magna)

ALGAL TOXICITY:

41000 ug/L 8 hour(s) EC50 (Growth) Green algae (Selenastrum capricornutum)

OTHER TOXICITY:

25 ug/L 24 day(s) (Residue) Wood frog (Rana sylvatica)

FATE AND TRANSPORT:

BIOCONCENTRATION:

4360 ug/L 24 day(s) BCF (Residue) Northern anchovy (Engraulis mordax) 97 ug/L

13. DISPOSAL CONSIDERATIONS

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Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U019. Hazardous Waste Number(s): D018. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 0.5 mg/L. Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

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-/SELECTION-->U.S. DOT 49 CFR 172.101. SHIPPING NAME-UN NUMBER; HAZARD CLASS; PACKING GROUP; LABEL:

Benzene-UN1114; 3; II; Flammable liquid

15. REGULATORY INFORMATION

Up to Table of Contents

U.S. REGULATIONS: TSCA INVENTORY STATUS: Y

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CERCLA SECTION 103 (40CFR302.4): Y Benzene: 10 LBS RQ

SARA SECTION 302 (40CFR355.30): N

SARA SECTION 304 (40CFR355.40): N

SARA SECTION 313 (40CFR372.65):Y Benzene

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21): ACUTE: Y CHRONIC: Y FIRE: Y REACTIVE: N SUDDEN RELEASE: N

OSHA PROCESS SAFETY (29CFR1910.119): N

STATE REGULATIONS: California Proposition 65: Y Known to the state of California to cause the following: Benzene Cancer (Feb 27, 1987) Developmental toxicity (Dec 26, 1997) Male reproductive toxicity (Dec 26, 1997)

EUROPEAN REGULATIONS:

EC NUMBER (EINECS): 200-753-7

EC RISK AND SAFETY PHRASES:

R 11	Highly flammable.
R 45	May cause cancer.
R 48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
S 45	In case of accident or if you feel unwell, seek medical advice

immediately (show the label where possible).			
S 53	Avoid exposure - obtain special instructions before use.		

16. OTHER INFORMATION Up to Tab

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SAFETY DATA SHEET

Diesel Cold Flow

Section 1. Identi	Date : 03/15/2017 Version : 1.1	
GHS product identifier	: Diesel Cold Flow	
Code	: ADD	
Product type	: Liquid.	
Identified uses	: Diesel Fuel Additive.	
Manufacturer	: AMSOIL INC. One AMSOIL Center Superior, WI 54880 Tel: +1 715-392-7101	
Initial Supplier (Canada)	: AMSOIL INC. Bordner, Ladner, Gervais Scotia Plaza, 40 King St W Toronto, ON, Canada M5H 3Y4 Tel: +1 416-367-6547	
Emergency telephone number (with hours of operation)	: CHEMTREC: Within USA and Canada: 1-800-42 Outside USA and Canada: +1 703-741-5970 (col (24/7)	24-9300; llect calls accepted)

Section 2. Hazards identification

OSHA/HCS status	 This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	 FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 2 ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (ACUTE) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 2
GHS label elements	

Hazard pictograms



Signal word	anger	
Hazard statements	ammable liquid and vapor. auses serious eye irritation. auses skin irritation. uspected of causing cancer. ay be fatal if swallowed and enters airways. ay cause respiratory irritation. ay cause damage to organs through prolonged or repeated exposure. (hearing o pxic to aquatic life with long lasting effects.	organs)
Precautionary statements		
Prevention	otain special instructions before use. Do not handle until all safety precautions here read and understood. Wear protective gloves. Wear eye or face protection ear protective clothing. Keep away from heat, hot surfaces, sparks, open flame her ignition sources. No smoking. Use explosion-proof electrical, ventilating, light all material-handling equipment. Use only non-sparking tools. Take precaution easures against static discharge. Keep container tightly closed. Use only outdot a well-ventilated area. Avoid release to the environment. Do not breathe vapor ash hands thoroughly after handling.	ave s and hting onary pors or r.
Response	ollect spillage. Get medical attention if you feel unwell. IF exposed or concerne edical attention. IF INHALED: Remove person to fresh air and keep comfortab eathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOV mediately call a POISON CENTER or physician. Do NOT induce vomiting. IF KIN (or hair): Take off immediately all contaminated clothing. Rinse skin with w ower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminate othing and wash it before reuse. If skin irritation occurs: Get medical attention. YES: Rinse cautiously with water for several minutes. Remove contact lenses, esent and easy to do. Continue rinsing. If eye irritation persists: Get medical at	d: Get le for VED: ON rater or ed IF IN if
Storage	ore locked up. Store in a well-ventilated place. Keep cool.	
Disposal	spose of contents and container in accordance with all local, regional, national a ternational regulations.	and
Hazards not otherwise class	HNOC)	
Physical hazards not otherwise classified (PHNOC)	one known.	
Health hazards not otherwise classified (HHNOC)	one 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	:	ADD

Ingredient name	%	CAS number
Solvent naphtha, light arom.	60 - 80	64742-95-6
1,2,4-Trimethylbenzene	15 - 25	95-63-6
2-Butoxyethanol	5 - 10	111-76-2
Hydrogenated Base Oil (64742-94-5)	5 - 10	64742-94-5
Xylene	5 - 10	1330-20-7
2-Ethylhexan-1-ol	1 - 5	104-76-7
Ethylbenzene	1 - 5	100-41-4
Cumene	0.1 - 1	98-82-8
Naphthalene	0.1 - 1	91-20-3

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 neo	essary 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. Continue to rinse for at least 20 minutes. Get medical attention.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	 Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Most important sy	mptoms/effects, acute and delayed

Potential acute health	effects
Eye contact	: Causes serious eye irritation.
Inhalation	: May cause respiratory irritation.
Skin contact	: Causes skin irritation.
Ingestion	: May be fatal if swallowed and enters airways.
Over-exposure signs/	symptoms

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness	
Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing	
Skin contact	: Adverse symptoms may include the following: irritation redness	
Ingestion	: Adverse symptoms may include the following: nausea or vomiting	
Indication of immediate me	al attention and special treatment needed, if necessary	
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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask of self-contained breathing apparatus. It may be dangerous to the person providing aid give mouth-to-mouth resuscitation.	or to

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	: Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	: Do not use water jet or water-based fire extinguishers.
Specific hazards arising from the chemical	: Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide
Special protective actions for fire-fighters	: 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.
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, protect	tiv	e 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	:	If specialized 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
Methods and materials for co	ont	ainment and cleaning up
Spill	:	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach 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). Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: Put on appropriate personal protective equipment (see Section 8). Avoid exposure obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid release to the environment. 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 only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Avoid contact with used product. Do not reuse container.

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.
Conditions for safe storage, including any incompatibilities	:	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. Store locked up. 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 unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Under conditions which may generate mists, the following exposure limits are recommended: ACGIH TLV TWA: 5 mg/m³; STEL: 10 mg/m³.

United States

Ingredient name	Exposure limits
1,2,4-Trimethylbenzene	ACGIH TLV (United States, 3/2015). TWA: 25 ppm 8 hours. TWA: 123 mg/m ³ 8 hours. NIOSH REL (United States, 10/2013). TWA: 25 ppm 10 hours. TWA: 125 mg/m ³ 10 hours.
2-Butoxyethanol	ACGIH TLV (United States, 3/2015). TWA: 20 ppm 8 hours. NIOSH REL (United States, 10/2013). Absorbed through skin. TWA: 5 ppm 10 hours. TWA: 24 mg/m ³ 10 hours. OSHA PEL (United States, 2/2013). Absorbed through skin. TWA: 50 ppm 8 hours.
Xylene	TWA: 240 mg/m ³ 8 hours. ACGIH TLV (United States, 3/2015). TWA: 100 ppm 8 hours. TWA: 434 mg/m ³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m ³ 15 minutes. OSHA PEL (United States, 2/2013). TWA: 100 ppm 8 hours. TWA: 435 mg/m ³ 8 hours.
Ethylbenzene	ACGIH TLV (United States, 3/2015). TWA: 20 ppm 8 hours. NIOSH REL (United States, 10/2013). TWA: 100 ppm 10 hours. TWA: 435 mg/m ³ 10 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m ³ 15 minutes. OSHA PEL (United States, 2/2013). TWA: 100 ppm 8 hours. TWA: 435 mg/m ³ 8 hours.
Cumene	ACGIH TLV (United States, 3/2015).

	TWA: 50 ppm 8 hours. NIOSH REL (United States, 10/2013). Absorbed through skin. TWA: 50 ppm 10 hours. TWA: 245 mg/m ³ 10 hours. OSHA PEL (United States, 2/2013). Absorbed through skin.
Naphthalene	TWA: 50 ppm 8 hours. TWA: 245 mg/m ³ 8 hours. ACGIH TLV (United States, 3/2015). Absorbed through skin.
	TWA: 10 ppm 8 hours. TWA: 52 mg/m ³ 8 hours. NIOSH REL (United States, 10/2013). TWA: 10 ppm 10 hours.

TWA: 10 ppm 10 hours. TWA: 50 mg/m³ 10 hours. STEL: 15 ppm 15 minutes. STEL: 75 mg/m³ 15 minutes. OSHA PEL (United States, 2/2013). TWA: 10 ppm 8 hours. TWA: 50 mg/m³ 8 hours.

Canada

Occupational exposure limits

Ingredient name	Exposure limits
1,2,4-Trimethylbenzene	CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 123 mg/m ³ 8 hours. CA British Columbia Provincial (Canada, 5/2015). TWA: 25 ppm 8 hours. CA Quebec Provincial (Canada, 1/2014). TWAEV: 25 ppm 8 hours. TWAEV: 123 mg/m ³ 8 hours. CA Ontario Provincial (Canada, 7/2015). TWA: 123 mg/m ³ 8 hours. TWA: 25 ppm 8 hours.
Ethylbenzene	CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 100 ppm 8 hours. 8 hrs OEL: 434 mg/m ³ 8 hours. 15 min OEL: 543 mg/m ³ 15 minutes. 15 min OEL: 125 ppm 15 minutes. CA British Columbia Provincial (Canada, 5/2015). TWA: 20 ppm 8 hours. CA Ontario Provincial (Canada, 7/2015). TWA: 20 ppm 8 hours. CA Quebec Provincial (Canada, 1/2014). TWAEV: 100 ppm 8 hours. TWAEV: 434 mg/m ³ 8 hours. STEV: 125 ppm 15 minutes. STEV: 543 mg/m ³ 15 minutes. CA Saskatchewan Provincial (Canada). STEL: 125 ppm 15 minutes. TWA: 100 ppm 8 hours.
Cumene	CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 50 ppm 8 hours. 8 hrs OEL: 246 mg/m ³ 8 hours. CA British Columbia Provincial (Canada, 5/2015). TWA: 25 ppm 8 hours. STEL: 75 ppm 15 minutes. CA Ontario Provincial (Canada, 7/2015). TWA: 50 ppm 8 hours. CA Quebec Provincial (Canada, 1/2014). TWAEV: 50 ppm 8 hours. TWAEV: 246 mg/m ³ 8 hours.

	CA Saskatchewan Provincial (Canada).
	STEL: 74 ppm 15 minutes.
	TWA: 50 ppm 8 hours.
Naphthalene	CA Alberta Provincial (Canada, 4/2009), Absorbed through skin.
	15 min OEL: 15 ppm 15 minutes.
	8 hrs OEL: 10 ppm 8 hours
	8 hrs OFL: 52 mg/m ³ 8 hours
	15 min OFL: 79 mg/m ³ 15 minutes.
	CA British Columbia Provincial (Canada, 5/2015), Absorbed through
	skin
	TWA: 10 ppm 8 hours
	STEL: 15 npm 15 minutes
	CA Ontario Provincial (Canada, 7/2015).
	TWA: 10 npm 8 hours
	$TWA: 52 ma/m^3 8 hours$
	STEL: 15 npm 15 minutes
	STEL: 79 ma/m ³ 15 minutes
	CA Quebec Provincial (Canada, 1/2014).
	TWAEV: 10 ppm 8 hours
	TWAEV: 52 mg/m ³ 8 hours
	STEV: 15 ppm 15 minutes
	STEV: 79 mg/m ³ 15 minutes
	CA Saskatchewan Provincial (Canada) Absorbed through skin
	STEL: 15 nnm 15 minutes
	$T_{M/A}$: 10 ppm 8 hours

Appropriate 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.
Environmental exposure controls	 Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures	
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: chemical splash goggles.
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. 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.
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. 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.
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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	 Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance		
Physical state	:	Liquid.
Color	:	Amber.
Odor	:	Aromatic hydrocarbon.
Odor threshold	:	Not available.
рН	:	Not available.
Melting point	:	-38°C (-36.4°F)
Boiling point	:	Not available.
Flash point	:	Closed cup: 46°C (114.8°F) [Pensky-Martens.]
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	:	0.8855
Solubility	:	Not available.
Partition coefficient: n- octanol/water	:	Not available.
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
Viscosity	:	Kinematic: 0.031 cm²/s (3.1 cSt) (40°C)
Volatility	:	Not available.

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	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
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 effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Solvent naphtha, light arom.	LD50 Oral	Rat	8400 mg/kg	A CONTRACTOR OF THE OWNER
1,2,4-Trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m ³	4 hours
· · ·	LD50 Oral	Rat	5 g/kg	-
2-Butoxyethanol	LC50 Inhalation Gas.	Rat	450 ppm	4 hours
	LD50 Dermal	Rabbit	220 mg/kg	-
	LD50 Oral	Rat	250 mg/kg	-
Xylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
2-Ethylhexan-1-ol	LD50 Dermal	Rabbit	1970 mg/kg	-
	LD50 Oral	Rat	3730 mg/kg	 AD 202
Ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
Cumene	LC50 Inhalation Vapor	Rat	39000 mg/m ³	4 hours
	LD50 Oral	Rat	1400 mg/kg	-
Naphthalene	LD50 Dermal	Rabbit	>20 g/kg	-
	LD50 Oral	Rat	490 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Solvent naphtha, light arom.	Eyes - Mild irritant	Rabbit	-	24 hours 100 µL	-
2-Butoxyethanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Severe irritant	Rabbit	-	100 mg	-
A	Skin - Mild irritant	Rabbit	-	500 mg	-
Hydrogenated Base Oil (64742-94-5)	Skin - Mild irritant	Rabbit	120 C	24 hours 500 µL	-
Xylene	Eyes - Mild irritant	Rabbit	-	87 mg	-
•	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 µL	2
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	100 %	-

2-Ethvlhexan-1-ol	Eyes - Moderate irritant	Rabbit	1-	24 hours 20 mg	
	Eyes - Moderate irritant	Rabbit	-	20 µg	-
	Eyes - Severe irritant	Rabbit	-	20 mg	-
	Skin - Mild irritant	Rabbit	-	415 mg	-
	Skin - Moderate irritant	Rabbit		24 hours 500 mg	to encountration
	Skin - Severe irritant	Rabbit	-	0.5 ml	-
Ethylbenzene	Eyes - Severe irritant	Rabbit	-	500 mg	
	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
Cumene	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Mild irritant	Rabbit	-	86 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 10 mg	-
Naphthalene	Skin - Mild irritant	Rabbit	-	495 mg	

Sensitization

There is no data available.

Carcinogenicity Classification

Product/ingredient name	OSHA	IARC	NTP		
2-Butoxyethanol		3	•		
Xylene	-	3	-		
Ethylbenzene	-	2B			
Cumene	-	2B	Reasonably anticipated to be a human carcinogen.		
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.		

Specific target organ toxicity (single exposure)

Name	Category	Target organs
1,2,4-Trimethylbenzene	Category 3	Respiratory tract irritation
2-Ethylhexan-1-ol	Category 3	Respiratory tract irritation
Cumene	Category 3	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Target organs
Ethylbenzene	Category 2	hearing organs

Aspiration hazard

Name	Result
Solvent naphtha, light arom. Hydrogenated Base Oil (64742-94-5)	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1
Cumene	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on the likely

: Dermal contact. Eye contact. Inhalation. Ingestion.

routes of exposure

Potential acute health effects

Eye contact	: Causes serious eye irritation.
Inhalation	: May cause respiratory irritation.
Skin contact	: Causes skin irritation.
Ingestion	: May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics : Adverse symptoms may include the following: Eye contact pain or irritation watering redness

Diesel Cold Flow

Inhalation	 Adverse symptoms may include the following: respiratory tract irritation coughing
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	 Adverse symptoms may include the following: nausea or vomiting

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 ef	fects	5
General	:	May cause damage to organs through prolonged or repeated exposure.
Carcinogenicity	:	Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	:	No known significant effects or critical hazards.
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.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	5588.3 mg/kg
Dermal	8638.3 mg/kg
Inhalation (gases)	44621.2 ppm
Inhalation (vapors)	66.65 mg/L

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
1,2,4-Trimethylbenzene	Acute LC50 4910 µg/l Marine water	Crustaceans - Elasmopus pectenicrus - Adult	48 hours
	Acute LC50 7720 µg/l Fresh water	Fish - Pimephales promelas	96 hours
2-Butoxyethanol	Acute EC50 >1000 mg/L Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 800000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 1250000 µg/l Marine water	Fish - Menidia beryllina	96 hours
2-Ethylhexan-1-ol	Acute LC50 28200 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Ethylbenzene	Acute EC50 13300 µg/l Fresh water	Crustaceans - Artemia sp Nauplii	48 hours
	Acute LC50 13900 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Cumene	Acute EC50 2600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 7400 µg/l Fresh water	Crustaceans - Artemia sp Nauplii	48 hours
	Acute EC50 10600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2700 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Naphthalene	Acute EC50 1600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Solvent naphtha, light arom.	-	10 to 2500	high
1,2,4-Trimethylbenzene	3.63	243	low
2-Butoxyethanol	0.81	-	low
Hydrogenated Base Oil (64742-94-5)	2.8 to 6.5	99 to 5780	high
Xylene	3.12	8.1 to 25.9	low
2-Ethylhexan-1-ol	2.9	25.33	low
Ethylbenzene	3.6	-	low
Cumene	3.55	94.69	low
Naphthalene	3.4	36.5 to 168	low

Mobility in soil

Soil/water partition coefficient (Koc)

: There is no data available.

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. Care should be taken when handling empty 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Xylene	1330-20-7	Listed	U239

Section 14. Transport information

	DOT	TDG	IMDG	IATA
UN number	UN1993	UN1993	UN1993	UN1993
UN proper shipping name	FLAMMABLE LIQUIDS, N.O.S. (Solvent naphtha, light arom., 1,2,4-Trimethylbenzene) RQ (Xylene, Naphthalene)	FLAMMABLE LIQUIDS, N.O. S. (Solvent naphtha, light arom., 1,2, 4-Trimethylbenzene)	FLAMMABLE LIQUIDS, N.O.S. (Solvent naphtha, light arom., 1,2,4-Trimethylbenzene). Marine pollutant (1,2, 4-Trimethylbenzene)	FLAMMABLE LIQUIDS, N.O.S. (Solvent naphtha, light arom., 1,2,4-Trimethylbenzene)
Transport hazard class(es)	3	3		3
Packing group		111	Ш	111
Environmental hazards	No.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	This product may be re- classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity. Reportable quantity 1713.7 lbs / 778.01 kg [232.1 gal / 878.61 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements. Remarks Limited quantity	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2. 19 (Class 3), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail. <u>Remarks</u> Limited quantity	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Remarks Limited quantity	The environmentally hazardous substance mark may appear if required by other transportation regulations. <u>Remarks</u> Limited quantity

DOT-RQ Details

: Xylene Naphthalene 100 lbs / 45.4 kg [13.946 gal / 52.791 L] 100 lbs / 45.4 kg

Special precautions for user	:	Transport within user's premises: always transport in closed conta upright and secure. Ensure that persons transporting the product know event of an accident or spillage.	iners that are w what to do	e in the
Transport in bulk according to Annex II of MARPOL and the IBC Code	÷	Not available.		

Section 15. Regulatory information

U.S. Federal regulations	: United States inventory (TSCA 8b): All components are listed or exempted. Clean Water Act (CWA) 307: Ethylbenzene; Naphthalene
	Clean water Act (CWA) 311: Xylene; Ethylbenzene; Naphthalene
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	: Listed
Clean Air Act Section 602 Class I Substances	: Not listed
Clean Air Act Section 602 Class II Substances	: Not listed
DEA List I Chemicals (Precursor Chemicals)	: Not listed
DEA List II Chemicals (Essential Chemicals)	: Not listed
SARA 302/304	
Composition/information	on ingredients
No products were found.	
SARA 304 RQ	: Not applicable.
SARA 311/312	
Classification	: Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Solvent naphtha, light arom.	Yes.	No.	No.	Yes.	No.
1,2,4-Trimethylbenzene	Yes.	No.	No.	Yes.	No.
2-Butoxyethanol	Yes.	No.	No.	Yes.	No.
Xylene	Yes.	No.	No.	Yes.	No.
2-Ethylhexan-1-ol	Yes.	No.	No.	Yes.	No.
Ethylbenzene	Yes.	No.	No.	Yes.	Yes.
Cumene	Yes.	No.	No.	Yes.	Yes.
Naphthalene	Yes.	No.	No.	Yes.	Yes.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	1,2,4-Trimethylbenzene	95-63-6	15 - 25
	2-Butoxyethanol	111-76-2	5 - 10
	Xylene	1330-20-7	5 - 10
	Ethylbenzene	100-41-4	1 - 5
	Naphthalene	91-20-3	0.1 - 1
Supplier notification	1,2,4-Trimethylbenzene	95-63-6	15 - 25
	2-Butoxyethanol	111-76-2	5 - 10
	Xylene	1330-20-7	5 - 10
	Ethylbenzene	100-41-4	1 - 5
	Naphthalene	91-20-3	0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulationsMassachusetts: The following components are listed: 1,2,4-Trimethylbenzene; 2-Butoxyethanol; Xylene;
2-Ethylhexan-1-ol; EthylbenzeneNew York: The following components are listed: Xylene; Ethylbenzene; Cumene; NaphthaleneNew Jersey: The following components are listed: 1,2,4-Trimethylbenzene; 2-Butoxyethanol; Xylene;
Ethylbenzene; Cumene; NaphthalenePennsylvania: The following components are listed: 1,2,4-Trimethylbenzene; 2-Butoxyethanol; Xylene;
Ethylbenzene; Cumene; Naphthalene

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Ethylbenzene	Yes.	No.	41 μg/day (ingestion) 54 μg/day (inhalation)	No.
Cumene Naphthalene	Yes. Yes.	No. No.	No. Yes.	No. No.

Canadian lists	
Canadian NPRI	 The following components are listed: Solvent naphtha, light arom.; 1,2, 4-Trimethylbenzene; 2-Butoxyethanol; Xylene; Hydrogenated Base Oil (64742-94-5); Ethylbenzene
CEPA Toxic substances	: The following components are listed: 2-Butoxyethanol; Naphthalene
Canada inventory	: All components are listed or exempted.

Section 16. Other information

History	
Date of issue mm/dd/yyyy	: 03/15/2017
Date of previous issue	: 02/28/2017
Version	: 1.1
Prepared by	: AMSOIL INC.

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.



AMSOIL Propylene Glycol Antifreeze & Coolant

Section 1. Identif	: 11/01/2016 : 6	
GHS product identifier	: AMSOIL Propylene Glycol Antifreeze & Coolant	
Code	: ANT	
Product type	: Liquid.	
Identified uses	: Antifreeze.	
Manufacturer	: AMSOIL INC. One AMSOIL Center Superior, WI 54880 Tel: +1 715-392-7101	
Initial Supplier (Canada)	: AMSOIL INC. Bordner, Ladner, Gervais Scotia Plaza, 40 King St W Toronto, ON, Canada M5H 3Y4 Tel: +1 416-367-6547	
Emergency telephone number (with hours of operation)	: CHEMTREC: Within USA and Canada: 1-800-424-9300; Outside USA and Canada: +1 703-741-5970 (collect calls accepted) (24/7)	

Section 2. Hazards identification

OSHA/HCS status	 This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: EYE IRRITATION - Category 2B
GHS label elements	
Signal word	: Warning
Hazard statements	: Causes eye irritation.
Precautionary statements	
Prevention	: Wash hands thoroughly after handling.
Response	: 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 attention.
Storage	: Not applicable.
Disposal	: Not applicable.
Hazards not otherwise class	sified (HNOC)
Physical hazards not otherwise classified (PHNOC)	: None known.

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Health hazards not
otherwise classified
(HHNOC)
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: None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of	: Not available.
identification	

CAS number/other ide	ntifiers		
CAS number	: Not applicable.		
Product code	: ANT		
Ingredient name		%	CAS number
Propane-1,2-diol		80 - 100	57-55-6

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 firs	t 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. Continue to rinse for at least 20 minutes. If irritation persists, get medical attention.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Wash out mouth with water. Remove dentures if any. 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. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Potential acute health effe	cts		
Eye contact	:	Causes eye irritation.	
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.	
Over-exposure signs/sym	otom	IS CONTRACTOR	
Eye contact		Adverse symptoms may include the following: pain or irritation watering redness	
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 me	dical	attention and special treatment needed, if necessary	
Notes to physician	:	Treat symptomatically.	
Specific treatments	:	No specific treatment.	
Protection of first-aiders	:	No action shall be taken involving any personal risk or without suitable training.	It may

Most important symptoms/effects. acute and delayed

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: None known.
Specific hazards arising from the chemical	: In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide
Special protective actions for fire-fighters	: 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.
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.

be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 6. Accidental release measures

Personal precautions, protec	tiv	e 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	:	If specialized 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	ont	ainment and cleaning up
Spill	:	Stop leak if without risk. Move containers from spill area. Approach 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). Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling	1	
Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Avoid contact with used product. Do not reuse container.
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. See also Section 8 for additional information on hygiene measures.
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

United States

Ingredient name	Exposure limits
Propane-1,2-diol	AIHA WEEL (United States, 10/2011). TWA: 10 mg/m ³ 8 hours.

<u>Canada</u>

Occupational exposure limits

Ingredient name	Exposure limits
Propane-1,2-diol	CA Ontario Provincial (Canada, 7/2015). TWA: 10 mg/m ³ 8 hours. Form: Aerosol only. TWA: 155 mg/m ³ 8 hours. Form: Vapor and aerosol TWA: 50 ppm 8 hours. Form: Vapor and aerosol

Appropriate engineering controls	•	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
Environmental exposure controls	:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

	and the second second	
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: chemical splash goggles.
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. 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.
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

: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance			
Physical state	:	Liquid.	
Color	:	Yellow.	
Odor	:	Sweet.	
Odor threshold	:	Not available.	
pН	2	8 to 8.6	
Melting point	:	-32.222°C (-26°F)	
Boiling point	:	107.78°C (226°F)	
Flash point	:	Closed cup: 99°C (210.2°F) [Pensky-Mar	tens.]
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	:	1.02 to 1.06	
Solubility	:	Soluble.	
Partition coefficient: n- octanol/water	1	Not available.	
Auto-ignition temperature	:	Not available.	
Decomposition temperature	÷	Not available.	
Viscosity	:	Not available.	
Volatility	:	Not available.	

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.

ANT

Section 11. Toxicological information

Information on toxicological effects

Acute toxicityProduct/ingredient nameResultSpeciesDoseExposurePropane-1,2-diolLD50 Dermal
LD50 OralRabbit
Rat20800 mg/kg
20 g/kg-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Propane-1,2-diol	Eyes - Mild irritant Eyes - Mild irritant	Rabbit Rabbit	-	24 hours 500 mg 100 mg	-

Sensitization

There is no data available.

Carcinogenicity

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

There is no data available.

Information on the likely routes of exposure	:	Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects		
Eye contact	:	Causes eye irritation.

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	: Adverse symptoms may include the following: pain or irritation watering redness
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.

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 effe	<u>cts</u>
General	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
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.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Propane-1,2-diol	Acute EC50 >110 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1020000 μg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 710000 μg/l Fresh water	Fish - Pimephales promelas	96 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Propane-1,2-diol	-1.07		low

Mobility in soil

Soil/water partition coefficient (Koc)	: There is no data available.
Mobility	: There is no data available.
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. Care should be taken when handling empty containers that have not been cleaned or rinsed out. 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	TDG	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-		
Transport hazard class(es)			-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-		

AERG : Not applicable

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according : Not available. to Annex II of MARPOL and the IBC Code

Section 15. Regulatory information

U.S. Federal regulations	:	United States invent	ory (TSC	A 8b): All com	ponents are li	sted or exempt	ted.
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	:	Not listed					
Clean Air Act Section 602 Class I Substances	:	Not listed					
Clean Air Act Section 602 Class II Substances	:	Not listed					
DEA List I Chemicals (Precursor Chemicals)	:	Not listed					
DEA List II Chemicals (Essential Chemicals)	:	Not listed					
SARA 302/304							
Composition/information	on	ingredients					
No products were found.							
SARA 304 RQ	:	Not applicable.					
SARA 311/312							
Classification	:	Immediate (acute) he	alth haza	rd			
Composition/information	on	ingredients					
Name	R)		Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Propane-1,2-diol			No.	No.	No.	Yes.	No.

SARA 313

No products were found.

State regulations

Massachusetts

: None of the components are listed. : None of the components are listed.

New York

New Jersey

- : The following components are listed: Propane-1,2-diol The following components are listed: Propane-1,2-diol
- Pennsylvania
- California Prop. 65

No products were found.

Canada

- **Canadian lists**
- **Canadian NPRI**
- None of the components are listed.
- **CEPA Toxic substances**
- : None of the components are listed. **Canada inventory**
 - : All components are listed or exempted.

Section 16. Other information

History

Date of issue mm/dd/yyyy	: 11/01/2016
Date of previous issue	: 02/15/2015
Version	: 6
Prepared by	: AMSOIL INC.

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.



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SAFETY DATA SHEET

Biodegradable Hydraulic Oil ISO 46

Section 1. Identification Date Version				
GHS product identifier	: Biodegradable Hydraulic Oil ISO 46			
Code	: BHO			
Product type	: Liquid.			
Identified uses	: Hydraulic fluid. Not to be misted.			
Manufacturer	: AMSOIL INC. One AMSOIL Center Superior, WI 54880 Tel: +1 715-392-7101			
Initial Supplier (Canada)	: AMSOIL INC. Bordner, Ladner, Gervais Scotia Plaza, 40 King St W Toronto, ON, Canada M5H 3Y4 Tel: +1 416-367-6547			
Emergency telephone number (with hours of operation)	: CHEMTREC: Within USA and Canada: 1-800-424-9300; Outside USA and Canada: +1 703-741-5970 (collect calls acce (24/7)	pted)		

Section 2. Hazards identification

OSHA/HCS status	: This material is not considered hazardous by the OSHA Hazard Commun Standard (29 CFR 1910.1200).	ication
Classification of the substance or mixture	: AQUATIC HAZARD (LONG-TERM) - Category 3	
GHS label elements		
Signal word	: No signal word.	
Hazard statements	: Harmful to aquatic life with long lasting effects.	
Precautionary statement	is in the second s	
Prevention	: Avoid release to the environment.	
Response	: Not applicable.	
Storage	Not applicable.	
Disposal	: Dispose of contents and container in accordance with all local, regional, n international regulations.	ational and
Hazards not otherwise cla	assified (HNOC)	
Physical hazards not	: None known.	
otherwise classified (PHNOC)		

Health hazards not otherwise classified (HHNOC) : None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	Mixture		
Other means of	:	Not available.		
identification				

CAS number/other ider	ntifiers		
CAS number	: Not applicable.		
Product code	: BHO		
Ingredient name		%	CAS number
2,6-di-tert-Butylphenol		≥1 - <2.5	128-39-2

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 necessa	ary 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. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Maintain an open airway. 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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Wash out mouth with water. 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. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute healt	h 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.
Over-exposure signs/sym	ptoms
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 me	dical attention and special treatment needed, if necessary
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 special protection is required.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: None known.
Specific hazards arising from the chemical	: This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide
Special protective actions for fire-fighters	: No special protection is required.
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, protective equipment and emergency procedures				
For non-emergency personnel	:	Put on appropriate personal protective equipment.		
For emergency responders	:	If specialized 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 dispe
	and sowers

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). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up Spill : Stop leak if without risk. Move containers from spill area. Approach 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). Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling	L	
Protective measures		Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Avoid contact with used product. Do not reuse container.
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. See also Section 8 for additional information on hygiene measures.
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

Under conditions which may generate mists, the following exposure limits are recommended: ACGIH TLV TWA: 5 mg/m³; STEL: 10 mg/m³.

United States

None known.

Canada

Occupational exposure limits None.

Appropriate engineering controls	 Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
Environmental exposure controls	 Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.
Individual protection meas	ures
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. 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.
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	: Not required under normal conditions of use.

Section 9. Physical and chemical properties

Appearance	
Physical state	: Liquid.
Color	: Yellow.
Odor	: Mild hydrocarbon.
Odor threshold	: Not available.
рН	: Not available.
Melting point	: -33°C (-27.4°F)
Boiling point	: Not available.
Flash point	: Open cup: 290°C (554°F) [Cleveland.]
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	: 0.938
Solubility	: Not available.

Partition coefficient: n- octanol/water	:	Not available.
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
Viscosity	:	Kinematic: 0.096 cm²/s (9.6 cSt) (100°C) Kinematic: 0.459 cm²/s (45.9 cSt) (40°C)
Volatility		Not available.

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 effects

Acute toxicity											
Product/ingredient name	Result				Specie	S	Dos	e	E	xposui	e
2,6-di-tert-Butylphenol	LD50 Dermal LD50 Oral				Rabbit >10 g/kg Rat >5000 mg/k		/kg) mg/kg	- -/kg -			
Irritation/Corrosion											
Product/ingredient name	Result			Spec	ies	Score)	Expos	ure	Ob	servation
2,6-di-tert-Butylphenol	Skin - Moderate irritant			Rat -		-	0.5 mL				
Sensitization										-	
There is no data available.											
Carcinogenicity											
Classification											
Product/ingredient name	OSHA	IARC	NTP						ACGIH	EPA	NIOSH
Distillates, hydrotreated light naphthenic	-	-	-				in a l		A4	-	-
//									-		

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure	:	Dermal contact. Eye contact. Inhalation. Ingestion.
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 sector of the sector sect	<u>sic</u> :	cal. chemical and toxicological characteristics 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 effect Short term exposure	s	and also chronic effects from short and long term exposure

: No known significant effects or critical hazards.
: No known significant effects or critical hazards.
: No known significant effects or critical hazards.
: No known significant effects or critical hazards.
ects
: No known significant effects or critical hazards.
: No known significant effects or critical hazards.
: No known significant effects or critical hazards.
: 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

Product/ingredient name	LogPow	BCF	Potential
2,6-di-tert-Butylphenol	4.5		high

Mobility in soil

Soil/water partition coefficient (Koc)	: There is no data available.
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. Care should be taken when handling empty containers that have not been cleaned or rinsed out. 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	TDG	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-

-	-		
	1		
			-
No.	No.	No.	No.
-	-	-	
	- - No. -	No	No. No

AERG : Not applicable

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according : Not available. to Annex II of MARPOL and the IBC Code

Section 15. Regulatory information

U.S. Federal regulations	: United States inventory (TSCA 8b): All components are listed or exempted. Clean Water Act (CWA) 307: Toluene; Benzene Clean Water Act (CWA) 311: Toluene; Benzene; Propylene oxide; Acetaldehyde			
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	: Listed			
Clean Air Act Section 602 Class I Substances	: Not listed			
Clean Air Act Section 602 Class II Substances	: Not listed			
DEA List I Chemicals (Precursor Chemicals)	: Not listed			
DEA List II Chemicals (Essential Chemicals)	: Not listed			

SARA 302/304

Composition/information on ingredients

			SARA 302 TPQ		SARA 304 RQ	
Name	%	EHS	(lbs)	(gallons)	(lbs)	(gallons)
Ethylene oxide Propylene oxide	0 - 0.1 0 - 0.1	Yes. Yes.	1000 10000	- 1444.3	10 100	- 14.4

SARA 304 RQ

: 9090909090.9 lbs / 4127272727.3 kg [1162377511.2 gal / 4400077534.4 L]

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
2,6-di-tert-Butylphenol	≥1 - <2.5	No.	No.	No.	Yes.	No.

SARA 313

No products were found.

State regulations

Massachusetts

- **New York**
- : The following components are listed: Distillates, hydrotreated light naphthenic : None of the components are listed.
- **New Jersey**
- : The following components are listed: Distillates, hydrotreated light naphthenic
- **Pennsylvania**
- : The following components are listed: Distillates, hydrotreated light naphthenic

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer. WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Toluene	No.	Yes.	No.	7000 µg/day (ingestion)
Benzene	res.	res.	13 µg/day (inhalation)	49 µg/day (inhalation)
1,4-Dioxane	Yes.	No.	Yes.	No.
Ethylene oxide	Yes.	Yes.	Yes.	Yes.
Propylene oxide	Yes.	No.	No.	No.
Acetaldehyde	Yes.	No.	90 µg/day (inhalation)	No.

Canada

<u>Canadian lists</u>	
Canadian NPRI	: None of the components are listed.
CEPA Toxic substances	: None of the components are listed.
Canada inventory	: All components are listed or exempted.

Section 16. Other information

History	
Date of issue mm/dd/yyyy	: 05/15/2016
Date of previous issue	: 03/15/2014
Version	: 6
Prepared by	: AMSOIL INC.

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.

DIESEL FUEL



000003000395

Version 3.1

Revision Date 2017/04/20

SECTION 1. IDENTIFICATION

Product name	:	DIESEL FUEL
Synonyms	:	Seasonal Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, D50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Die- sel, Furnace special, Biodiesel blend, B1, B2, B5, Diesel Low Cloud (LC), Marine Gas Oil, Marine Gas Oil Dyed.
Product code	:	102762, 102763, 102755, 102302, 102744, 101801, 100678, 100677, 101802, 100107, 100668, 100658, 100911, 100663, 100652, 100460, 100065, 101796, 101793, 101795, 101792, 101794, 101791, 100768, 100643, 100642, 100103, 101798, 101800, 101797, 101788, 101789, 101787, 102531, 100734, 100733, 100640, 100997, 100995, 100732, 100731, 100994
Manufacturer or supplier's deta	ils	
		Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary Alberta T2P 3E3 Canada
Emergency telephone num- ber		Suncor Energy: +1 403-296-3000; Canutec Transportation: 1-888- 226-8832 (toll-free) or 613- 996-6666
		Poison Control Centre: Consult local telephone directory for emergency number(s).
Recommended use of the ch	om	nical and restrictions on use
Recommended use of the chemic and th		Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compres- sion ignition type. Mining diesels, marine diesels, MDO and naval distillates may have a higher flash point requirement.
Prepared by	:	Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview	1
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Appearance	Bright oily liquid.
Colour	Clear to yellow (This product may be dyed red for taxation purposes)
Odour	Mild petroleum oil like.

GHS Classification

Flammable liquids Internet: www.petro-canada.ca/msds Petro-Canada is a Suncor Energy business. : Category 3

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Acute toxicity (Inhalation)	:	Category 4	
Skin irritation	:	Category 2	
Carcinogenicity	:	Category 2	
Specific target organ toxicity - single exposure	:	Category 3 (Central nervous system)	
Specific target organ toxicity - repeated exposure	•	Category 2 (Liver, thymus, Bone)	
Aspiration hazard	:	Category 1	
GHS label elements			
Hazard pictograms	:		
Signal word	:	Danger	
Hazard statements	:	Flammable liquid and vapour. May be fatal if swallowed and enters a Causes skin irritation. Harmful if inhaled. May cause drowsiness or dizziness. Suspected of causing cancer. May cause damage to organs (Liver, f prolonged or repeated exposure.	airways. thymus, Bone) through
Precautionary statements		Prevention: Obtain special instructions before use Do not handle until all safety precaution understood. Keep away from heat, hot surfaces, sp other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and recein Use explosion-proof electrical/ ventilat Use non-sparking tools. Take action to prevent static discharg Do not breathe dust/ fume/ gas/ mist/ Wash skin thoroughly after handling. Use only outdoors or in a well-ventilat Wear protective gloves/ protective close protection. Response: IF SWALLOWED: Immediately call a IF ON SKIN (or hair): Take off immed clothing. Rinse skin with water. IF INHALED: Remove person to fresh for breathing. Call a POISON CENTE IF exposed or concerned: Get medica	bons have been read and parks, open flames and ving equipment. ting/ lighting/ equipment. es. vapours/ spray. ted area. thing/ eye protection/ face POISON CENTER/doctor. iately all contaminated mair and keep comfortable iR/doctor if you feel unwell. al advice/ attention.

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	Do NOT induce vomiting. If skin irritation occurs: Get med Take off contaminated clothing In case of fire: Use dry sand, dr foam to extinguish. Storage: Store in a well-ventilated place Store in a well-ventilated place Store locked up. Disposal: Dispose of contents/ container plant.	dical advice/ attention. and wash it before reuse. ry chemical or alcohol-resistant . Keep container tightly closed. . Keep cool. to an approved waste disposal
Potential Health Effects		
Primary Routes of Entry	: Eye contact Ingestion Inhalation Skin contact Skin Absorption	
Target Organs	: Skin Eyes Respiratory Tract	
Inhalation	: May cause respiratory tract irri Inhalation may cause central n Symptoms and signs include h muscular weakness, drowsines consciousness.	tation. ervous system effects. eadache, dizziness, fatigue, ss and in extreme cases, loss of
Skin	: Causes skin irritation.	
Eyes	: Causes eye irritation.	
Ingestion	: Ingestion may cause gastrointe ing and diarrhoea. Aspiration hazard if swallowed damage.	estinal irritation, nausea, vomit- - can enter lungs and cause
Aggravated Medical Condi- tion	: None known.	
Other hazards None known.		
IARC	No component of this product pre equal to 0.1% is identified as prol human carcinogen by IARC.	esent at levels greater than or bable, possible or confirmed
ACGIH	Confirmed animal carcinogen wit mans	h unknown relevance to hu-
	Fuel Oil No. 1	8008-20-6

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
fuels, diesel	68334-30-5	70 - 100 %
fuel oil no. 2	68476-30-2	
kerosine (petroleum)	8008-20-6	
kerosine (petroleum), hydrodesulfurized	64742-81-0	
Alkanes, C10-20-branched and linear	928771-01-1	0 - 25 %
Soybean oil, Methyl ester	67784-80-9	0 - 5%
Rape oil, Methyl ester	73891-99-3	
Fatty acids, tallow, Methyl esters	61788-61-2	

SECTION 4. FIRST AID MEASURES

If inhaled	Move to fresh air. Artificial respiration and/or oxygen may be necessary. Seek medical advice.	
In case of 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 recognized skin cleanser. Wash clothing before reuse. Seek medical advice. 	
In case of eye contact	 Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention. 	
If swallowed	 Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice. 	
Most important symptoms and effects, both acute and delayed	: None known.	
Protection of first-aiders	 First Aid responders should pay attention to self-protection and use the recommended protective clothing It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. 	



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SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media		Dry chemical Carbon dioxide (CO2) Water fog. Foam
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during fire- fighting	÷	Cool closed containers exposed to fire with water spray.
Hazardous combustion prod- ucts	:	Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), sulphur compounds (H2S), smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if nec- essary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- tive equipment and emer- gency procedures	:	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	 For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.
	Avoid contact with skin, eyes and clothing. Do not ingest.
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Conditions for safe storage	 Keep away from heat and sources of i Keep container closed when not in use Store in original container. Containers which are opened must be kept upright to prevent leakage. Keep in a dry, cool and well-ventilated Keep in properly labelled containers. To maintain product quality, do not stol light. 	gnition. e. carefully resealed and place. re in heat or direct sun-

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
kerosine (petroleum)	8008-20-6	TWA	200 mg/m3 (total hydrocarbon vapor)	CA BC OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	CA AB OEL
2		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
kerosine (petroleum), hy- drodesulfurized	64742-81-0	TWA	200 mg/m3 (As total hydro- carbon vapour)	ACGIH
· A		TWA	200 mg/m3 (As total hydro- carbon vapour)	ACGIH
Engineering measures	: Use only in w Ensure that e to the work-s	vell-ventilated an eyewash station tation location.	reas. and safety shower are	e proximal
Personal protective equipm	ent			
Respiratory protection	: Use respirato ventilation is that exposure Respirator se	provided or exp provided or exp es are within red election must be	nless adequate local e posure assessment de commended exposure based on known or a	xhaust monstrates guidelines. nticipated

Components with workplace control parameters

Filter	type
--------	------

exposure levels, the hazards of the product and the safe working limits of the selected respirator.

: 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.

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Hand protection Material	: neoprene, nitrile, polyvinyl alcoho your PPE provider for breakthrou glove that is best for you based o should be realized that eventuall their imperviousness, will get per Therefore, protective gloves sho wear and tear. At the first signs o should be changed.	ol (PVA), Viton(R). Consult ugh times and the specific on your use patterns. It y any material regardless of rmeated by chemicals. uld be regularly checked for of hardening and cracks, they
Remarks	: Chemical-resistant, impervious g approved standard should be wo chemical products if a risk asses essary.	loves complying with an orn at all times when handling sment indicates this is nec-
Eye protection	: Wear face-shield and protective problems.	suit for abnormal processing
Skin and body protection	: Choose body protection in relation tration and amount of dangerous cific work-place.	on to its type, to the concen- s substances, and to the spe-
Protective measures	: Wash contaminated clothing before	ore re-use.
Hygiene measures	: Remove and wash contaminated ing the inside, before re-use. Wash face, hands and any expo- handling.	d clothing and gloves, includ- sed skin thoroughly after

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Bright oily liquid.	
Colour	:	Clear to yellow (This product may purposes)	be dyed red for taxation
Odour	:	Mild petroleum oil like.	
Odour Threshold	:	No data available	
рН	:	No data available	
Pour point	÷	No data available	
Boiling point/boiling range	:	150 - 371 °C (302 - 700 °F)	
Flash point	:	> 40 °C (104 °F) Method: closed cup	
Auto-Ignition Temperature	:	225 °C (437 °F)	
Evaporation rate Flammability	:	No data available Flammable in presence of open fla	ames, sparks and heat. Va-

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		pours are heavier than air and may tra- tance to sources of ignition and flash b accumulate static charge and ignite.	vel considerable dis- ack. This product can
Upper explosion limit	:	6 %(V)	
Lower explosion limit	:	0.7 %(V)	
Vapour pressure	:	7.5 mmHg (20 °C / 68 °F)	
Relative vapour density	:	4.5	
Relative density	:	0.8 - 0.88	
Solubility(ies)			
Water solubility	;	insoluble	
Partition coefficient: n- octanol/water	:	No data available	
Viscosity			
Viscosity, kinematic	:	1.3 - 4.1 cSt (40 °C / 104 °F)	
Explosive properties	:	Do not pressurise, cut, weld, braze, so pose containers to heat or sources of i may create fire or explosion hazard.	lder, drill, grind or ex- gnition. Runoff to sewer

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reac- tions	:	Hazardous polymerisation does not occur. Stable under normal conditions.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents and acids.
Hazardous decomposition products	:	May release COx, NOx, SOx, H2S, smoke and irritating va- pours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure Eye contact Ingestion Inhalation Skin contact Skin Absorption

Acute toxicity

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Product: Acute oral toxicity	:	Remarks: No data available	
Acute inhalation toxicity	:	Remarks: No data available	
Acute dermal toxicity	:	Assessment: The substance or toxicity Remarks: No data available	mixture has no acute dermal
Components:			
fuels, diesel: Acute oral toxicity	:	LD50 (Rat): 7,500 mg/kg,	
Acute dermal toxicity	:	LD50 (Mouse): 24,500 mg/kg,	
fuel oil no. 2: Acute oral toxicity	:	LD50 (Rat): 12,000 mg/kg,	
Acute inhalation toxicity	:	LC50 (Rat): 4.1 mg/l Exposure time: 4 h Test atmosphere: dust/mist	
kerosine (petroleum): Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg,	
Acute inhalation toxicity	:	LC50 (Rat): > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist	
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg,	
kerosine (petroleum), hydro Acute oral toxicity	de: :	sulfurized: LD50 (Rat): > 5,000 mg/kg,	
Acute inhalation toxicity	:	LC50 (Rat): > 5.2 mg/l Exposure time: 4 hrs Test atmosphere: dust/mist	
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg,	
Skin corrosion/irritation			
<u>Product:</u> Remarks: No data available			
Serious eye damage/eye irri	itat	ion	
<u>Product:</u> Remarks: No data available			

Respiratory or skin sensitisation

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No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	: Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates	: Remarks: No data available
Toxicity to algae	: Remarks: No data available
Toxicity to bacteria	: Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues

: The product should not be allowed to enter drains, water

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	courses or the soil. Offer surplus and non-recyclable s posal company.	solutions to a licensed dis-
	Waste must be classified and labe disposal. Send to a licensed waste manage	ment company.
	Dispose of as hazardous waste in national regulations.	compliance with local and
	Dispose of product residue in account of the person responsible for was	ordance with the instructions re disposal.
Contaminated packaging	: Do not re-use empty containers.	

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR UN/ID No. Proper shipping name Class Packing group Labels Packing instruction (cargo aircraft)	•••••••••••	UN 1202 Diesel fuel 3 III Class 3 - Flammable Liquid 366
IMDG-Code UN number Proper shipping name	:	UN 1202 DIESEL FUEL
Class Packing group Labels EmS Code Marine pollutant	••••••	3 III 3 F-E, S-E no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

National Regulations

TDG		
UN number	:	UN 1202
Proper shipping name	÷	DIESEL FUEL
Class	2	3
Packing group	ż	111
Labels	:	3
ERG Code		128
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

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This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

The components of this product are reported in the following inventories:

DSL TSCA	On the inventory, or in compliance with the inventory All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption
EINECS	On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

For Copy of SDS	:	Internet: www.petro-canada.ca/msds Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837- 1228 For Product Safety Information: 1 905-804-4752
Prepared by	:	Product Safety: +1 905-804-4752
Revision Date	:	2017/04/20

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