



Spill Contingency Plan

Lockhart All Season Road Geotechnical Investigation

October | 2023

Government of Northwest Territories

Document Control

The Government of the Northwest Territories Department of Infrastructure (GNWT-INF) and its Contractors are responsible for the distribution, maintenance and updating of the Spill Contingency Plan (SCP).

This Spill Contingency Plan will be reviewed and revised as required at least annually, considering changes in the law, environmental factors, GNWT policies, and any other pertinent site-specific changes; and following a major spill incident. Version history is provided in the table below.

Version	Section(s) Revised	Description of Revision	Issue Date
1.0	N/A	Submitted with Land Use Permit application	October 2023

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1 Introduction

This Spill Contingency Plan (SCP) has been developed for use by the Government of the Northwest Territories - Department of Infrastructure (GNWT-INF) and its Contractors for the Lockhart All Season Road (LASR) Geotechnical Investigation (the Project).

The purpose of the SCP is to provide a guide to all site personnel on measures to avoid accidental release of hazardous materials and actions to take in the event of an accidental release. All persons involved with the Project will read and be familiar with the SCP. To be effective, it is important that all personnel are familiar with their responsibilities and steps to take in the event of a spill. Personnel will not read the SCP for the first time during an emergency.

1.1 Project Contacts

Primary GNWT-INF contact:

David Scott-McQuinn Manager, Slave Geological Province Corridor Government of the Northwest Territories 7th Floor, YK Centre 4922 48th Street PO Box 1320 Yellowknife, NT X1A 2L9 Phone: (867) 767-9082 ext 31022 Email: David-Scott_McQuinn@gov.nt.ca

Primary Contractor contact:

To be determined

1.2 Roles and Responsibilities

The GNWT–INF is responsible for the success of this plan and approves all relevant policies and documents, auditing, action planning and the verification process. GNWT-INF Contractors are responsible for the implementation and adherence to this Plan.

All GNWT and Contractor personnel involved in this Project are responsible for the effectiveness of the SCP by completing required training and supporting the implementation of this Plan.

1.3 Legislation and Guidelines

Applicable environmental legislation and guidelines include:

- Guidelines for Spill Contingency Planning (INAC 2007)
- Fisheries Act and Regulations (Government of Canada 1985)

- *Transportation of Dangerous Goods Act* and Regulations (Government of Canada 1992)
- Northwest Territories *Environmental Protection Act* and regulations (including the Spill Contingency Planning and Reporting Regulations) (GNWT 1988, 1998)
- Northwest Territories *Waters Act* and Regulations (GNWT 2014)
- Mackenzie Valley Resource Management Act (Government of Canada 1998a)
- Mackenzie Valley Land Use Regulations (Government of Canada 1998b)

2 Project Description

The Government of the Northwest Territories - Department of Infrastructure (GNWT-INF) is proposing to conduct Geotechnical Investigations to gather information in support the development of the Lockhart All Season Road (LASR) between Highway 4 (the Ingraham Trail) at Tibbitt Lake to Lockhart Lake. The Geotechnical Investigations will consist of assessing potential hard-rock quarries and granular resources (collectively referred to as target areas) as material for construction of an all-season road.

Potential target areas that have been identified for further investigation between Highway 4 and Lockhart Lake from desktop evaluation and previous studies are provided in Appendix A. Additional potential target areas may be identified based on on-going engagement and studies.

Project operations that occur in the summer will include the use of heli-portable drills and will use existing camps in the area. No new roads or trails are required.

Project operations occurring in the winter will include the use of heli-portable drills and the construction of spur roads from the Tibbitt to Contwoyto Winter Road for the Project. Work will be supported by existing camps or by the creation of a mobile camp. Generally, hard-rock quarries will be assessed by drill, while granular resources will be sampled by digging test pits. The assessment of each target area will include describing geochemistry, volumes, subgrade conditions, drainage and ground temperature. Monitoring equipment may be installed (e.g., such as ground temperature monitors) and may include monuments or other surface infrastructure. The development of fuel caches may be required to support testing pitting and drilling operations.

2.1 Potential Contaminants

The Project estimated fuel and containment requirements during operation are presented in Table 1.

Type of Fuel and Total Estimated Volume	Capacity of Containers	Number	Containment Type	Storage Location
Diesel	10,000 litres	2	Tank	Fuel Truck
Diesel	25,000 litres	2	Double-walled tank	On Camp
Diesel	205 litres	60	Drums	On Camp

Table 1: Type, Amount and Location of Main Hazardous Materials on Site

Type of Fuel and Total Estimated Volume	Capacity of Containers	Number	Containment Type	Storage Location
Gasoline	205 litres	20	Drums	On Camp
Aviation Fuel	205 litres	20	Drums	On Camp
Oils and lubricants	205 litres	10	Drums	On Camp
Used oil	205 litres	10	Drums	On Camp
Contaminated Soil or Snow	205 litres	10	Drums	On Camp in case of emergencies
Propane Tanks	100 lbs	20	Tank	On Camp
Antifreeze	1041 litres	2	Bulk Container	On Camp
Sewage (Grey Water)	1041 litres	2	Bulk Container	On Camp

Table 1: Type, Amount and Location of Main Hazardous Materials on Site

The Safety Data Sheets (SDS) for each hazardous material is included in Appendix B.

A variety of equipment will be used in execution of the Project. Spills may result from several occurrences including the following:

- Leaks or ruptures of fuel storage drums or tanks
- Valve or line failure in systems, vehicles, or heavy equipment
- Vehicular accidents
- Spill during fuel transfer
- Leaks from containment / collection systems
- Vandalism
- Lack of/or improper training

2.2 Potential Impacts

Spills into water can dissipate and affect a larger area than on land. Spills into creeks or other waterbodies could impact the downstream environment, including water quality, fish, and fish habitat.

Hydrocarbons have the potential to bio-accumulate in the environment, may be harmful to wildlife and aquatic life, and are not readily biodegradable. Direct or indirect contamination of water via hydrocarbons can potentially cause illness or death to aquatic or wildlife species. Oil and lubricants are more viscous and are not anticipated to migrate as quickly as gasoline and diesel but have the potential to seep into underlying soils.

3 Response Organization

Whenever a spill is identified, GNWT-INF and Contractors will be contacted as soon as possible. Contact information is provided in Section 1.1

3.1 Spill Response

This section identifies the response organization and the chain of command for responding to a spill, based on the Guidelines for Spill Contingency Planning (INAC 2007). Communication in the field will be through radios, satellite phones and cell phones.

For all spills, the initial response is as follows:

- 1) Assess personal safety and safety of others.
- 2) Identify product.
- 3) Notify Project Manager.

3.1.1 For Minor Spills

For spills below the Immediately Reportable Spill Quantities (Appendix D) use the following procedure:

- 1) Stop the spill if safely possible.
- 2) Ensure the spill does not enter a waterbody.
- 3) Complete the NT-NU Spill Report Form (Appendix C) to be kept in company records.
- 4) Report to the Inspector on an agreed schedule (i.e., during inspections or at the end of the Project).
- 5) Clean up spill.
- 6) Remediate the area, if necessary.

3.1.2 For Major Spills

For spills that meet or exceed the Immediately Reportable Spill Quantities (Appendix D) use the following procedure:

- 1) Stop the spill if safely possible.
- 2) Ensure the spill does not enter a waterbody.
- 3) Notify the NT-NU 24-Hour Emergency Spill Report Line at: 867-920-8130.
- 4) Recover as much fuel as possible.
- 5) Complete the NT-NU Spill Report Form (Appendix C).
- 6) Report to the Inspector as soon as possible during work hours.
- 7) Clean up spill and remediate the area, if necessary.

4 Action Plans

This section outlines the procedures that must be taken in response to a spill.

4.1 Initial Actions

The following actions will be taken by the first person(s) who identifies a spill:

- 1) Be alert and consider your safety and the safety of others around you.
- 2) If possible, identify the spilled contaminant.
- 3) Assess the hazard to persons around the spill.
- 4) If possible, without further assistance, control any danger to human life or the environment.
- 5) Assess whether the spill can be readily stopped or brought under control.
- 6) If safe to do so, and if possible, try to stop the spillage of contaminants.
- 7) Gather information about the status of the situation. Take photos and record notes of observations.
- 8) Report the spill immediately to the Contractor and the GNWT-INF representative.
- 9) Resume any effective action to contain, clean up or stop the flow of spilled contaminant.
- 10) Ensure all wastes generated during spill clean-up are labelled as to their content and the date and arrange for disposal off-site in accordance with applicable regulatory requirements. See Section 4.3 for more information on spill response procedures.

4.2 Reporting Procedure

All spills will be documented by the Contractor or GNWT-INF. To report a spill, complete the NT-NU Spill Report Form (Appendix C) as completely as possible. If the spill exceeds the Immediately Reportable Spill Quantity (Appendix D), contact the NT-NU 24-Hour Emergency Spill Report Line at (867) 920-8130.

Any person reporting a spill is required to give as much information as possible; however, reporting of a spill should not be delayed if all the necessary information is not known. Additional information can be provided later. As much of the following information will be reported during the initial spill report (from the Spill Contingency Planning and Report Regulations (1998)):

- Date and time of spill.
- Location of spill.
- Direction spill is moving.
- Name and phone number of a contact person close to the location of the spill.

- Type of contaminant spilled and quantity.
- Cause of spill.
- Whether spill is continuing or has stopped.
- Description of existing containment.
- Action taken to contain, recover, clean up, and dispose of spilled contaminant.
- Name, address, and phone number of people reporting the spill.
- Name of owner or person in charge, management, or control of contaminants at the time of the spill.

4.3 Spill Prevention

The most likely scenarios under which a spill could occur during the Project are leakage or line failure from heavy equipment or other vehicles, spilling during fuel transfer, or vehicular accident.

Primary spill prevention measures include:

- Post and enforce speed limits on the road.
- All workers will receive spill response training prior to beginning work.
- Pre-project and tailgate safety meetings will be held regularly to minimize accidents and malfunctions in the field.
- All contaminants will be stored at a designated storage area more than 100 m from the ordinary high-water mark of any water body.
- Fuel drums will be located on flat, stable ground, drums will be stored with bung and vent holes at 3 and 9 o'clock positions.
- Other contaminants will be stored within a containment berm with capacity to hold 110% or more of the stored contaminants.
- All fuel storage and transfer will take place at a designated area, a minimum of 100 m from any waters, and will be conducted by trained personnel. A fuel service truck will deliver the diesel to equipment on site. Refueling of equipment will take place on the access road where the equipment is situated during construction. The fuel transfers procedure consists of using a powered pump nozzle that feeds directly into the equipment fuel tank. Spill containments will always be employed during fuel transfers. Gasoline may be used in light-duty trucks. These vehicles will refuel off site at a local gas station or from fuel drums.
- Personal protective equipment (PPE) should be always worn when handling hazardous materials.
- An emergency spill response kit will be kept in vehicles and wherever fuel is stored.
- Spill mats and/or drip pans/trays will be placed under all mobile fueling containers and under equipment when not in use.
- All equipment will be regularly maintained and in good working order and free of leaks.

- Regular inspection and maintenance will be conducted for all heavy equipment and vehicles, including fuel transfer hoses and fuel/oil lines.
- Identified equipment or vehicle deficiencies will be repaired.
- Drips will be cleaned up immediately.
- Machinery used for work below the high-water mark will use only biodegradable hydraulic fluid.
- Equipment used in or near water will be clean and free of oil, grease, or other deleterious substances.
- Vehicles travelling on the road will be properly loaded and loads appropriately covered where necessary.

4.4 Spill Response

The following steps outline the general spill response procedures for initial actions to be taken to contain and clean up a spill, as well as disposing of contaminated materials. Two procedures have been developed for handling contaminant spills, depending on where the spill has occurred (i.e., on land or in water/on ice or snow).

4.4.1 Spills on Land

- 1) Once a spill is identified, all sources of ignition will be turned off (e.g., no smoking, shut off engines) if spilled material is flammable / ignitable.
- 2) The spilled material (e.g., gasoline, diesel, antifreeze, etc.) will be identified, if possible.
- 3) The affected area will be secured, ensuring the area is safe for entry and does not represent a threat to human health and safety of the spill responders. Public access of the area will be restricted.
- 4) If possible, identify where the spill is coming from (the source). Determine if the spill is still occurring (i.e., still leaking) or if the spillage has stopped. If the spill has not stopped, determine if it is safe to stop or control the spill (e.g., plug hole, close valve, upright container), or contain the spill (e.g., place a container or tarp (as well as spill socks, pillows, and pads) with built up edges under the spill source to contain the spill).
- 5) If the spill is too large to be controlled with the spill materials at hand, contact the Contractor or GNWT-INF representative and report the spill immediately and request assistance (see Section 3 for contact information). Use materials on hand to attempt to control the spill.
- 6) If the spill is small enough to be controlled with the spill response materials at hand, prevent spilled contaminants from spreading or entering waterways by using sorbent materials or a snow/soil dyke down slope from the spill. This is especially the case with liquid contaminants (e.g., gasoline, diesel). If some contaminant has entered a waterway, follow procedures in Section 4.4.2 to contain and clean-up the contaminant in the water.

- 7) Once the spill has been controlled and further spreading prevented, contact the Contractor or GNWT-INF representative (see Section 3 for contact information) and document the spill (see Appendix C).
- 8) Spills that exceed the Immediately Reportable Spill Quantities (Appendix D) must be reported to the NT-NU 24-Hour Emergency Spill Report Line at (867) 920-8130.
- 9) If possible, with spill response materials at hand, clean up the remaining spilled contaminant and store contaminated materials in a secure container for proper disposal. Do not flush the affected area with water.

4.4.2 Spills on Ice or Snow

- 1) Once a spill is identified, all sources of ignition will be turned off (e.g., no smoking, shut off engines).
- 2) The spilled material (e.g., gasoline, diesel, antifreeze, etc.) will be identified, if possible.
- 3) The affected area will be secured, ensuring the area is safe for entry and does not represent a threat to human health and safety of the spill responders. Public access of the area will be restricted.
- 4) If possible, identify where the spill is coming from (the source). Determine if the spill is still occurring (i.e., still leaking) or if the spillage has stopped. If the spill has not stopped, determine if it is safe to stop or control the spill (e.g., plug hole, close valve, upright container).
- 5) If the spill is too large to be controlled with the spill materials at hand, contact the Contractor or GNWT-INF representative and report the spill immediately and request assistance (see Section 3 for contact information). Use materials on hand to attempt to control the spill.
- 6) If the spill is small enough to be controlled with the spill response materials at hand, use sorbent booms to contain the spill for recovery. Place sorbent sheets on the water within the boomed area to help contain the contaminant. For narrow waterways such as streams, place one or more sorbent booms across the waterway, downstream of the spill location, and anchor the booms on each bank.
- 7) Once the spill has been controlled and further spreading prevented, contact the Contractor or GNWT-INF representative (see Section 3 for contact information) and document the spill (see Appendix C).
- 8) Spills that exceed the Immediately Reportable Spill Quantities (Appendix D) must be reported to the NT-NU 24-Hour Emergency Spill Report Line at (867) 920-8130.
- 9) If possible, with the spill response materials at hand clean up the remaining spill contaminant within the boomed area. Store contaminated materials in a secure container for proper disposal.

4.5 Restoration

Following a spill event, the Contractor or GNWT-INF representative will maintain regular contact with the Inspector. Status updates of the cleanup efforts are required on a regular basis. The

required level of final cleanup and restoration following a spill shall be to the satisfaction of the Inspector. All waste materials from clean-up efforts must be disposed of in accordance with applicable regulatory requirements.

5 Resource Inventory

5.1 On-Site Resources

5.1.1 Personnel

All personnel working in the field on the Project will be trained on site in spill prevention, response, and clean-up measures.

5.1.2 Equipment

A detailed list of equipment that will be on site at each camp and available to respond to potential spills include:

- Personnel vehicles.
- Spill kits.
- Communication devices.

A list of equipment will be provided once the Contractor has been selected.

5.1.3 Spill Kits

At least one spill kit will be clearly marked and present at all fuel storage areas. Vehicles may also carry additional spill response supplies.

The following outlines the recommended minimum requirements for contents of spill kits to be used during the Project. Each spill kit will be regularly inspected to see that it contains the following, at a minimum:

- 1 spill kit container (identified as an overpack drum, steel salvage drum, or spill kit locker).
- 10 disposable large 5 mil polyethylene bags (dimensions 65 cm x 100 cm) with ties.
- 4 sorbent booms (12.5 cm x 3 m).
- 10 kg bag of granular absorbent.
- 100 sheets (1 bail) of 50 cm x 50 cm sorbent sheets for both universal and oil only.
- 2 large (5 m x 5 m) plastic tarps.
- 1 roll of duct tape.
- 1 utility knife.
- 1 field notebook and pencil.

- 1 rake.
- 1 pickaxe.
- 3 spark-proof shovels.
- 4 Tyvex splash suits.
- 4 pairs chemical resistant gloves.
- 4 pairs of splash protective goggles.
- Instruction binder, including Spill Contingency Plan.

The entire spill kit contents, except for the spark-proof shovels, can be stored within the spill kit container. The containers will be sealed securely to protect the spill kit contents though they will always be accessible without the use of tools (i.e., finger tight bolt ring). The container's locking mechanism will be inspected regularly during facility inspections to check that it operates correctly and is lubricated. Spill kit contents will be re-stocked immediately after use.

To be confirmed by the Contractor

5.2 Off-Site Resources

Table 2 contains a tentative list of local agencies available in case of an emergency.

Table 2: Local Agencies in case of Emergency

Contact	Phone
Mackenzie Valley Land and Water Board	867-669-0506
Fisheries and Oceans Canada (Yellowknife)	867-669-4900
Environment and Climate Change Canada Environmental Enforcement	867-669-4730
GNWT Environmental Health Office	867-669-8979
RCMP	911
Medivac (Yellowknife)	911
KBL Environmental Services Emergency Response	855-354-5263

Additional off-site resources may be provided by the Contractor.

6 Training

6.1 Introduction

The Contractor is responsible for providing a qualified supervisor and training site workers in spill response. All individuals hired to work on the Project will have their basic first aid and Workplace Hazardous Materials and Information System (WHMIS) training before working on site. Any

persons involved in the handling and shipping of hazardous materials will receive Transportation of Dangerous Goods (TDG) training and will maintain a valid TDG certificate.

6.2 Training

A training session on spill prevention and response will be held for all individuals prior to the start of the Project. Training exercises, including proper use of spill kits, will provide hands-on training for individuals on spill response procedures and equipment. Training exercises can be held during the training session for all individuals or at another time for individuals directly involved with handling of hazardous materials.

The training session will review the SCP and include information on:

- Individuals' roles and responsibilities regarding spill prevention, detection, response, and clean-up.
- Location(s) of hard copies of the SCP, maps, and spill kits.
- Equipment available for spill response.
- Content of spill kits.
- Initial actions and spill reporting procedures.
- Spill response and clean-up actions.
- Mock exercises.

6.3 Schedule and Record Keeping

The training session and exercises will be held prior to the start of operation as part of a Worker Orientation Seminar. Follow up training sessions for new and current employees will occur on a suitably recurring schedule so that returning individuals receive a refresher while new individuals become familiar with onsite spill prevention and response measures.

The Contractor will keep records of all individuals who attend the training session and exercises, as well as copies of their training certificates (e.g., first aid, WHMIS).

7 Media and Public Enquiries

All enquiries are to be directed to the Contractor or GNWT-INF representative. Employees will not make any statements on behalf of GNWT-INF or its Contractors to the media or to the public.

Employees will respond fully to any request from local authorities or emergency workers that will help to control the spill and its damage. Employees will refer all other requests for information to the Contractor or GNWT-INF representative. This may include questions from reporters, environmental agencies, or people and property owners affected by a spill. When probing questions are asked, it is important that the response is polite and professional, for example: "I'm sorry, I am not the spokesperson for the Project. Please provide your name, media affiliation, and contact information and I will have the Project spokesperson get back to you as soon as possible".

No speculation will be made regarding who is at fault, why the spill occurred, spill volume, when cleanup will be completed, or any other issue.

NWT Spill Reports are available for the public to view upon request by contacting the NWT Spill Line or by viewing the GNWT Hazardous Materials Spill Database online at <u>Spills | Environment and Climate Change (gov.nt.ca)</u>.

8 References

- INAC (Indigenous and Northern Affairs Canada). 2007. Guidelines for Spill Contingency Planning. Water Resources Division, INAC, Yellowknife, NT. Retrieved September 2021 from: <u>http://www.enr.gov.nt.ca/sites/enr/files/guidelines for spill contingency planning 2007.</u> pdf.
- Government of Canada. 1985. *Fisheries Act.* R.S.C. 1985, c. F-14. Current to February 8, 2023. Last amended August 28, 2019. Minister of Justice. Ottawa, ON.
- Government of Canada. 1992. *Transportation of Dangerous Goods Act.* S.C. 1992, c. 34. Current to February 8, 2023. Last amended August 28, 2019. Minister of Justice. Ottawa, ON.
- Government of Canada. 1998a. *Mackenzie Valley Resource Management Act.* S.C. 1998, c. 25. Current to February 8, 2023. Last amended on August 28, 2019. Minister of Justice. Ottawa, ON.
- Government of Canada. 1998b. Mackenzie Valley Land Use Regulations. SOR/98-429. Current to February 8, 2023. Last amended on June 20, 2017. Minister of Justice. Ottawa, ON.
- GNWT (Government of Northwest Territories). 1988. *Environmental Protection Act*. R.S.N.W.T. 1988, c. E-7. Last amended 2017. Department of Justice. Yellowknife, NT.
- GNWT. 1998. Spill Contingency Planning and Reporting Regulations. R-068-93. Department of Justice. Yellowknife, NT.
- GNWT. 2014. *Waters Act.* S.N.W.T. 2014, c. 18. Last amended 2015. Department of Justice. Yellowknife, NT.

APPENDIX A: Project Maps



APPENDIX B: Safety Data Sheets

SAFETY DATA SHEET





Revision Date 02-Aug-2018

SDS Number 888100004478

Revision Number 3.01

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product Name

Synonyms

CARB Diesel, APPC174

Recommended Use Uses advised against

No information available All others

Manufacturer

Tesoro Refining & Marketing Co. 19100 Ridgewood Parkway San Antonio, TX 78259 Emergency Telephone

Diesel Low Sulfur (LSD) and Ultra Low Sulfur Diesel (ULSD)

Chemtrec: 1-800-424-9300 Tesoro Call Center: 1-877-783-7676

E-mail address ProductStewardship@TSOCORP.com

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 3
Acute Inhalation Toxicity - Vapors	Category 3
Acute Inhalation Toxicity - Dusts and Mists	Category 4
Skin Corrosion/Irritation Category	Category 2
Carcinogenicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 2
Chronic Aquatic Toxicity	Category 2
Aspiration toxicity	Category 1

Label elements

Danger

Flammable liquid and vapor Causes skin irritation May cause cancer May cause damage to organs through prolonged or repeated exposure Toxic to aquatic life with long lasting effects May be fatal if swallowed and enters airways Toxic if inhaled



Odor Characteristic petroleum or kerosene-like

Precautionary Statements - Prevention

Obtain special instructions before use Do not handle until all safety precautions have been read and understood Wear protective gloves/protective clothing/eye protection/face protection Use only outdoors or in a well-ventilated area Wash face, hands and any exposed skin thoroughly after handling Do not breathe dust/fume/gas/mist/vapors/spray Keep away from heat/sparks/open flames/hot surfaces. - No smoking Keep container tightly closed Ground/or bond container and receiving equipment Use explosion-proof electrical/ ventilating / lighting / equipment Use only non-sparking tools Take precautionary measures against static discharge Keep cool

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention If skin irritation occurs: Get medical advice/attention IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower Wash contaminated clothing before reuse IF INHALED: Remove person to fresh air and keep comfortable for breathing Call a POISON CENTER or doctor IF SWALLOWED: Immediately call a POISON CENTER or doctor Do NOT induce vomiting In case of fire: Use CO2, dry chemical, or foam to extinguish

Precautionary Statements - Storage

Store locked up Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

Harmful to aquatic life.

3. COMPOSITION/INFORMATION ON INGREDIENTS

General Composition Statement D re m use	Diesel Fuels consist of complex mixtures of various hydrocarbons having diverse structures represented by paraffins, olefins, naphthenes, and aromatics hydrocarbons. Composition may contain additives and/or dyes which are not considered hazardous at the concentration used. Sulfur content less than 15 ppm.			
Chemical Name Diesel Fuel Nonane		CAS-No	Percent	
		68476-34-6	0-100	
		111-84-2	0-5	

Naphthalene	91-20-3	0-1
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4. FIRST AID MEASURES

Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. Remove from exposure, lie down. In case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt, seek medical advice. Never give anything by mouth to an unconscious person. Take off all contaminated clothing immediately and thoroughly wash material from skin.
Inhalation	If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. Immediate medical attention is required. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Aspiration into lungs can produce severe lung damage. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Get immediate medical advice/attention. Delayed pulmonary edema may occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Get immediate medical advice/attention.
Self-protection of the first aider	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Do not breathe vapor or mist. Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).
Most important symptoms and effect	ts, both acute and delayed
Symptoms	Difficulty in breathing. Coughing and/ or wheezing. Dizziness.
Indication of any immediate medical	attention and special treatment needed
Note to physicians	Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances.
	5. FIRE-FIGHTING MEASURES
Suitable Extinguishing Media	Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.
Small Fire	Any extinguisher suitable for Class B fires, dry chemical, CO2, foam (AFFF/ATC), or water spray can be used.
Large Fire	Water spray, fog or alcohol-resistant foam. CAUTION: Use of water spray when fighting fire

NFPA Health	n hazards 1	Flammability 2	Stability 0	Physical and chemical properties -
Further information	ALWAYS unmanned from ventii safety dev after fire is	stay away from tanks eng I hose holders or monitor ng safety devices or disco ices; icing may occur. Co s out. Do not allow run-off	ulfed in fire. Fight fire nozzles. Withdraw impoloration of tank. Do no ol containers with floor from fire-fighting to en	from maximum distance or use mediately in case of rising sound of direct water at source of leak or ding quantities of water until well iter drains or water courses.
Special protective equipment fire-fighters	for Firefighter gear. For withdraw f	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn.		
Explosion data Sensitivity to Mechanical I Sensitivity to Static Discha	mpact None. I rge Yes.			
Hazardous combustion produce	cts Smoke, C	O, and other products of i	ncomplete combustior	۱.
Specific hazards arising from chemical	the Risk of igr In the even extinguish	Risk of ignition. Keep product and empty container away from heat and sources of igni In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.		
Unsuitable extinguishing med	ia CAUTION	: Use of water spray whe	n fighting fire may be i	nefficient.
	may be in	efficient. Cool containers	with flooding quantities	s of water until well after fire is out.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not breathe vapor or mist. See section 8 for more information. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.
Other Information	Refer to protective measures listed in Sections 7 and 8. Ventilate the area.
Environmental precautions	
Environmental precautions	Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.
Methods and material for containme	nt and cleaning up
Methods for containment	Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Do not breathe vapor or mist. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Use personal protection equipment. Avoid contact with skin and eyes. Keep away from heat/sparks/open flames/hot surfaces. -No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Store away from other materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL
Diesel Fuel 68476-34-6	TWA: 100 mg/m³ total hydrocarbons inhalable fraction and vapor S*	-
Nonane 111-84-2	TWA: 200 ppm	(vacated) TWA: 200 ppm (vacated) TWA: 1050 mg/m ³
Naphthalene 91-20-3	TWA: 10 ppm S*	TWA: 10 ppm TWA: 50 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 50 mg/m ³ (vacated) STEL: 15 ppm (vacated) STEL: 75 mg/m ³

S* - Potential exposure by cutaneous route

NOTE: Limits shown for guidance only. For additional information, OSHA's 1989 air contaminants standard exposure limits provided even though the limits were vacated in 1992. State, local or other agencies or advisory groups may have established more stringent limits. Follow applicable regulations.

Appropriate engineering controls

Engineering controls	Showers Eyewash stations Ventilation systems.
Individual protection measures, suc	h as personal protective equipment
Eye/face protection	Tight sealing safety goggles.
Hand Protection	Wear suitable gloves. Impervious gloves.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Use a NIOSH approved respirator when there is a potential

	for airborne concentrations to exceed occupational exposure limits. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2, NIOSH Respirator Decision Logic, and the respirator manufacturer for additional guidance on respiratory protection selection. A Self-Contained Breathing Apparatus (SCBA) should be used for fire fighting. Use a NIOSH approved positive-pressure supplied air respirator if there is a potential for uncontrolled release, exposure levels are unknown, in oxygen deficient (less than 19.5% oxygen), or any other circumstance where an air-purifying respirator may not provide adequate protection.
General hygiene considerations	Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and c	hemical properties	
Physical State @20°C	Liquid	
Appearance	Liquid	
Odor	Characteristic petroleum or kerosene-l	like
Color	Clear to straw . May contain Red Dve	
Odor threshold	0.1 - 1 ppm typically reported	
	······································	
Property	Values	Remarks • Method
рН	Not applicable	
Melting point / freezing point	-15 °C / 5 °F	
Boiling range	154 - 372 °C	
Flash point	52 °C / 126 °F	
Evaporation rate	No data available	
Flammability (solid, gas)	Not applicable	
Flammability Limit in Air %		
Upper flammability limit:	6.5	
Lower flammability limit:	0.6	
Vapor pressure	<0.27	
Vapor density	>4.5	
Relative density	0.86	
Water solubility	0.0005 g/100 mL	
Solubility in other solvents	No data available	
Partition coefficient	>3.63	
Autoignition temperature	257 °C / 495 °F	
Decomposition temperature	No data available	
Kinematic viscosity	1 to 6 mm2/s	
Dynamic viscosity	No data available	
Explosive properties	No data available	
Oxidizing properties	No data available	
Minimum Ignition Energy (mJ)	No data available	
K st (bar.m/s)	No data available	
Softening point	No data available	
VOC Content (%)	No data available	
Density	No data available	
Bulk density	Not applicable	
Conductivity	Diesel Fuel Oils at terminal load rack: . without conductivity additive: 0 pS/m to conductivity additive: At least 50 pS/m	At least 25 pS/m. Ultra Low Sulfur Diesel (ULSD) o 5 pS/m. ULSD at terminal load rack with . JP-8 at terminal load rack: 150 pS/m to 600 pS/m.

10. STABILITY AND REACTIVITY

Chemical stability	Stable under recommended storage conditions.	Stable under recommended storage conditions.	
Reactivity	This product is non-reactive under normal conditions.		

Possibility of hazardous reactions	None under normal processing.	
Conditions to avoid	Excessive heat. Heat, flames and sparks.	
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.	
Hazardous decomposition products None under normal use conditions.		

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Toxic by inhalation. (based on components). Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal.
Eye contact	Specific test data for the substance or mixture is not available. Irritating to eyes. (based on components).
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). Repeated exposure may cause skin dryness or cracking.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways.

Information on toxicological effects

Symptoms

Redness. May cause redness and tearing of the eyes. Difficulty in breathing. Coughing and/ or wheezing. Dizziness.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) ATEmix (inhalation-dust/mi ATEmix (inhalation-vapor)	50,000.00 mg/kg ist) 1.30 mg/l 3.00 mg/l
Chemical Name	Oral LD50
N 1	

Chemical Name	Oral LD50	LD50/dermal/rat - NO UNITS (Wizards mg/kg)	Inhalation LC50
Nonane 111-84-2	-	-	= 3200 ppm (Rat)4 h
Naphthalene 91-20-3	= 1110 mg/kg (Rat)= 490 mg/kg (Rat)	= 1120 mg/kg (Rabbit)> 20 g/kg (Rabbit)	> 340 mg/m³(Rat)1 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

88810000//78	Diesel Low Sulfur (LSD) and Litra Low Sulfur	 Page 7/12	
Naphthalene	Acute (short term) exposure to large amounts of naphthalene may blood cells, a condition termed hemolytic anemia. Symptoms of h	damage or destroy red emolytic anemia include	
Chemical Name Nonane	Nonane may be fatal if it is swallowed and enters the airway. Nonane affects the eyes, skin, respiratory system, and central nervous system. If inhaled, short-term overexposure can cause drowsiness, dizziness, and possibly death. Exposure to high enough levels of nonane can cause irritation to eyes, nose, and skin (including dermatitis). Sensitization is not reported.		

fatigue, lack of appetite, restlessness, and pale skin. Acute inhalation or oral exposure to large amounts of naphthalene may also cause nausea, vomiting, diarrhea, blood in the urine, and a yellow color to the skin. Ingestion may result in death. Chronic (long term) exposure in rats and mice can lead to irritation and inflammation of their nose and lungs; nasal hyperplasia and metaplasia in respiratory and olfactory epithelium has been reported in studies in mice. Exposure to high enough levels may have effects on the blood, resulting in chronic hemolytic anemia, and effects on the eyes, resulting in the development of cataracts. Cancer from naphthalene exposure has been observed in animals, but not humans. IARC has classified naphthalene as possibly carcinogenic to humans (Group 2B), and the ECHA C&L Inventory reports that naphthalene is suspected of causing cancer (Carc. 2).

Health hazard and classification information

Skin Corrosion/Irritation Category	Classification based on data available for ingredients. Irritating to skin.
Serious eye damage/eye irritation	No information available.
	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	Classification based on data available for ingredients. Contains a known or suspected carcinogen.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Diesel Fuel 68476-34-6	A3	Group 3	-	-
Naphthalene 91-20-3	A3	Group 2B	Reasonably Anticipated	Х
Reproductive toxicity	No informa	tion available.		
Target Organ Systemic T Single Exposure	oxicant - No informa	t - No information available.		
Target Organ Systemic T Repeated Exposure	oxicant - Causes da	Causes damage to organs through prolonged or repeated exposure.		
Target organ effects	liver, kidne	liver, kidney, Respiratory system, Eyes, Skin, Central nervous system, blood.		
Aspiration hazard	May be fata	May be fatal if swallowed and enters airways.		

12. ECOLOGICAL INFORMATION

Additional Ecological Information Release of this product should be prevented from contaminating soil and water and from entering drainage and sewer systems. U.S.A. regulations require reporting spills of this material that could reach any surface waters. The toll free number to the U.S. Coast Guard National Response Center is (800) 424-8802 Toxic to aquatic life with long lasting effects.

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Diesel Fuel 68476-34-6	-	35: 96 h Pimephales promelas mg/L LC50 flow-through	-	-
Naphthalene 91-20-3	0.4: 72 h Skeletonema costatum mg/L EC50	5.74 - 6.44: 96 h Pimephales promelas mg/L LC50 flow-through	-	1.96: 48 h Daphnia magna mg/L EC50 Flow through 1.09 - 3.4: 48 h

31.0265: 96 h Lepomis	Daphnia magna mg/L
macrochirus mg/L LC50	EC50 Static 2.16: 48 h
static 0.91 - 2.82: 96 h	Daphnia magna mg/L
Oncorhynchus mykiss	LC50
mg/L LC50 static 1.6: 96	
h Oncorhynchus mykiss	
mg/L LC50 flow-through	
1.99: 96 h Pimephales	
promelas mg/L LC50	
static	

Persistence and degradability

No information available.

Bioaccumulation

There is no data for this product.

Component Information

Chemical Name	Partition coefficient
Naphthalene	3.6
91-20-3	

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products	Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Empty containers pose a potential fire and explosion hazard. Do not cut, puncture of weld containers.

US EPA Waste Number

U165 U239 D001.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Naphthalene	U165	Included in waste	-	U165
91-20-3		streams: F024, F025,		
		F034, F039, K001, K035,		
		K060, K087, K145		

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Naphthalene 91-20-3	-	-	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and	-

	positions of chlorine	
	substitution.	

California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Naphthalene	Toxic
91-20-3	

14. TRANSPORT INFORMATION

DOT

UN/ID no Proper Shipping Name Hazard Class Packing group Reportable Quantity (RQ) Special Provisions Description Emergency Response Guide Number	UN1202/NA1993 Diesel fuel 3 III (Naphthalene: RQ (kg)= 45.40, Xylenes (mixed isomers): RQ (kg)= 45.40) 144, B1, IB3, T2, TP1 UN1202, DIESEL FUEL, III 128
<u>TDG</u> UN/ID no Proper Shipping Name Hazard Class Packing group Description	UN1202/NA1993 Diesel fuel 3 III UN1202, DIESEL FUEL, III
<u>MEX</u> UN/ID no Proper Shipping Name Hazard Class Packing group Description	UN1202/NA1993 GAS OIL 3 III UN1202, GAS OIL, III
IATA UN/ID no Proper Shipping Name Hazard Class Packing group ERG Code Description	UN1202/NA1993 Diesel fuel 3 III 3L UN1202, DIESEL FUEL, III
IMDG UN/ID no Proper Shipping Name Hazard Class Packing group EmS No. Special Provisions Description	UN1202/NA1993 GAS OIL 3 III F-E, S-E 363 UN1202, GAS OIL, III, (52°C C.C.), Marine pollutant

	15. REGULATORY INFORMATION
International Inventories	
TSCA	Listed
DSL/NDSL	Listed
ENCS	Not Listed

IECSC	Listed
KECL	Listed
PICCS	Listed
AICS	Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

<u>SARA 313</u>

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA	311/312	2 Hazard	Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Naphthalene 91-20-3	100 lb	Х	Х	Х

CERCLA

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil, fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply.

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Naphthalene - 91-20-3	Carcinogen

U.S. State Right-to-Know Regulations

US State Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Nonane	Х	X	Х
111-84-2			
Naphthalene	X	X	Х
91-20-3			

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Revision Date

02-Aug-2018

Revision Note

SDS sections updated. 3.

Disclaimer

Tesoro Companies, Inc. (Tesoro) provides the information on this Safety Data Sheet (SDS) in order to meet its obligations under 29 CFR 1910.1200, and does not hereby make any guarantee of product specifications or suitability for any particular purpose. Tesoro does not assume any liability arising out of the use of Tesoro's product or the use of information provided on this SDS. The end user of the product has the responsibility for evaluating the adequacy of the data under the conditions of use, determining the safety, toxicity and suitability of the product under these conditions, and obtaining additional or clarifying information where uncertainty exists. No guarantee expressed or implied is made as to the effects of such use, the results to be obtained, or the safety and toxicity of the product in any specific application. Furthermore, the information herein is not represented as absolutely complete, since it is not practicable to provide all relevant information in the format of this document, since additional information may be necessary under exceptional conditions of use, and since Tesoro prepared this SDS based on information available on the date of its publication.

1153, 1188, 1309, 1443, 1866, 1925

End of Safety Data Sheet



Product Name: ECO-ROD GREASE

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: ECO-ROD GREASE PRODUCT DESCRIPTION: Calcium Sulfonate Complex grease, containing no heavy metals or environmentally undesirable additives. PRODUCT CODE: GW-ERG-5 INTENDED USE: Heavy duty, thick & tacky Diamond Drill Rod Grease.

Company Identification

Manufacturers Name: Grease Warehouse Address: 2158 45th Avenue Suite 513 – Highland, Indiana 46322 Telephone Number: (866) 573-8763 Emergency: 1-800-255-3924

SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT CAS NUMBER TLV/PEL (mg/M3)WEIGHT %Petroleum Oil 64742-52-5 10 (As Oil Mist)80 - 90Performance Package Mixture NE10 - 20

The specific chemical names and composition of the components not disclosed is confidential business information and is withheld as permitted by 29CFR 1910.1200 and various state Right-to-Know laws. This Product is not a WHMIS Controlled Substance.

SECTION 3: HAZARD IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines. (See Section 15.) POTENTIAL HEALTH EFFECTS Excessive exposure may result in eye, skin or respiratory irritation. Low order of toxicity. High-pressure injection under skin may cause serious damage. NFPA Rating: Flammability: 1, Reactivity: 0, Health: 1 HMIS Rating: Flammability: 1, Reactivity: 0, Health: 1 NOTE: This material should not be used for any other purpose than the intended use listed in Section 1 without expert advice. Health studies have shown that

chemical exposure may cause potential human health risks, which may vary from person to person.

SECTION 4: FIRST AID MEASURES

EYE CONTACT: Immediately flush with large quantities of cool water for at least 15 minutes. Get medical attention.

SKIN CONTACT: Wash off with soap and water.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.

INGESTION: Do NOT induce vomiting. Get medical attention. Notes to Physician: High pressure injection under the skin may have serious consequences and may require urgent treatment.

SECTION 5: FIRE AND EXPLOSION DATA

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Water Spray (fog), dry chemical, foam, halon, or carbon dioxide.

Inappropriate Extinguishing Media: Water stream may splash burning liquid and spread fire.

FIRE FIGHTING

Fire Fighting Procedures: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply. Fire fighters should use self-contained breathing apparatus (SCBA) to fight fires. Use water spray to cool fire exposed surfaces and to protect personnel. Hazardous Combustion Products: Smoke, Fume, Sulfur oxides, oxides of carbon.

FLAMMABILITY PROPERITES

Flashpoint (Cleveland Open Cup): 473F (245C) Flammable Limits (Approximate volume% in Air): LEL: NA UEL: NA Autoignition Temperature: NA

SECTION 6: ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURE

Contain any spills with absorbents to prevent migrations and entry into sewers or streams. Take up small spills with dry chemical absorbent. Large spills may be taken up with pump or vacuum and finished off with dry chemical absorbent. May require excavation of contaminated soil.

SPILL MANAGEMENT

Land Spill: Contain any spills with absorbents to prevent migrations and entry into sewers or streams. Take up small spills with dry chemical absorbent. Large spills may be taken up with pump or vacuum and finished off with dry chemical absorbent. May require excavation of contaminated soil. Water Spill: Confine the spill immediately with booms. Stop leak, if you can do so without risking personal safety. Report spills as required to appropriate authorities. Remove from the surface by skimming or with suitable absorbents.

ENVIRONMENTAL PRECAUTIONS

Large spills should be diked for later recovery or disposal. Spills may be taken up with pump or vacuum and finished off with dry chemical absorbent. May require excavation of contaminated soil. To the best of Grease Warehouse knowledge, this product is not regulated by CERCLA/RCRA as a hazardous waste or material. However, this product has not been tested for the toxicity characteristic via the Toxicity Characteristic Leaching Procedure. Therefore, it may be disposed of as an industrial waste in a manner acceptable to good waste management practice and in compliance with applicable local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

HANDLING

Avoid contact with skin. Prevent spills and leaks to avoid slipping hazards.

STORAGE

Keep containers sealed until ready for use. Avoid excessive long-term storage temperatures to prolong shelf life. Maximum storage temperature: 120F. Store in well ventilated areas.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION INFORMATION

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur, the following are recommended: 5 mg/m3 – ACGIH TLV, 10mg/m3 – ACGIH STEL, 5 mg/m3 – OSHA PEL ENGINEERING CONTROLS

The level pf protection and types of control necessary will vary depending upon potential exposure conditions. Under normal conditions, no special control required when used in a well-ventilated area with local exhaust ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: None required in normal use. Use only NIOSH/MSHA Organic vapor approved equipment if necessary.

Hand Protection: Chemical resistant gloves are recommended. No protection is required in normal use.

Eye Protection: Goggles or safety glasses with side shields are recommended.

Skin and Body Protection: Chemical / oil resistant clothing if contact with material is likely. NO skin protection is ordinarily required under normal conditions of use. Special Hygiene Measures: Practice good personal hygiene. Wash hands after use and handling. ENVIRONMENTAL CONTROLS See Section 6, 7, 12, 13.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data. GENERAL INFORMATION Physical State: Smooth Semi-Solid Grease Color: Green Odor: Slight petroleum odor Odor Threshold: None IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL **INFORMATION** Relative Density (at 15 C): 0.89 Flashpoint (Cleveland Open Cup): 473F (245C) Flammable Limits (Approximate volume% in Air): LEL: NA UEL: NA Autoignition Temperature: NA Boiling Point / Range: NE Vapor Density (Air = 1): < 1 mmVapor Pressure, mmHg at 25C: < 1 mm Evaporation Rate (n-butyl acetate = 1): NE pH: NE Log Pow (n-Octanol/Water Partition Coefficient): NE Solubility in Water: Slight Viscosity: NE Oxidizing Properties: See Section 3, 15, 16. OTHER INFORMATION Freezing Point: NE Melting Point: NE Pour Point: NE DMSO Extract (mineral oil only), IP-346: NE

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable under normal temperatures and pressures CONDITIONS TO AVOID: Excessive heat. Sources of ignition. MATERIALS TO AVOID: Strong oxidizing agents, heat, open flame. Hazardous Decomposition Products: Does not decompose at ambient temperatures.

Hazardous Polymerization: Does not occur.
SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Product or Ingredients: No data is specifically available for this product and therefore this toxicological information is based on data available for the ingredients. Routes of Exposure: Exposure will most likely occur through skin contact or form inhalation of mechanically or thermally generated oil mists. Skin and Eye: This product is not a primary skin irritant after exposure of short duration, is not a skin sensitizer and is not irritating to the eyes. . CHRONIC/OTHER EFFECTS Prolonged and repeated contact with skin can cause defatting and drying of the skin resulting in skin irritation and dermatitis. Long term intensive exposure to oil mist may cause benign lung fibrosis.

The following ingredients are cited on the lists below: None

NTP CARC, NTP SUS, IARC 1, IARC 2A, IARC 2B, OSHA CARC This material is not known to contain any chemical listed as a carcinogen or suspected carcinogen by OSHA Hazard Communication Standard 29CFR 1910.1200, IARC, or the National Toxicology Program (NTP) at a concentration greater than 0.1%.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY

Material - Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component – Low solubility and float and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation: Base oil component – Expected to be inherently biodegradable.

SECTION 13: DISPOSAL INFORMATION

Disposal recommendations based on material as supplied. Therefore, it may be disposed of as an industrial waste in a manner acceptable to good waste management practice and in compliance with applicable local, state, and federal regulations.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

To the best of Grease Warehouse knowledge, this product is not regulated by CERCLA/RCRA as a hazardous waste or material. However, this product has not been tested for the toxicity characteristic via the Toxicity Characteristic Leaching Procedure.

Empty Container Warning: Do not attempt to refill or clean containers since residue is difficult to remove. Empty drums should be completely drained, properly bunged and returned to a drum re-conditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 14: TRANSPORT INFORMATION

LAND-DOT: Not Regulated for Land Transportation LAND-TDG: Not Regulated for Land Transportation SEA-IMDG: Not Regulated for Sea Transport AIR-IATA: Not Regulated for Air Transport

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Standard: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

WHMIS: Not a controlled product
Chemical Inventory Listing: TSCA, CEPA
EPCRA: This material contains no extremely hazardous substances.
SARA (311/312) Reportable Hazard Categories: None
SARA (313) Toxic Release Inventory: This material contains no chemicals
subject to the supplier notification requirements of the SARA 313 Toxic Release
Program
TSCA: This material is in compliance with the Toxic Substances Control Act (15USC2601-2629)
CEPA: All components of this product are either on the Domestic Substance List (DSL) or are exempted.

SECTION 16: OTHER INFORMATION

NE = Not Established, ND = Not Determined, NA = Not Applicable THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS: No Revision information is available. Revision Date: January 1, 2010 Supercedes: Any previous versions Prepared by: Grease Warehouse

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MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name:MOBIL DELVAC 1300 SUPER 15W-40Product Description:Base Oil and AdditivesProduct Code:201520403560, 440693-00, 970529Intended Use:Engine oil

COMPANY IDENTIFICATION

Supplier:

EXXON MOBIL CORPORATION 3225 GALLOWS RD. FAIRFAX, VA. 22037 USA

24 Hour Health Emergency Transportation Emergency Phone ExxonMobil Transportation No. Product Technical Information MSDS Internet Address SA 609-737-4411 800-424-9300 281-834-3296 800-662-4525, 800-947-9147 http://www.exxon.com, http://www.mobil.com

SECTION 2

COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3

HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL HEALTH EFFECTS

Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use

Product Name: MOBIL DELVAC 1300 SUPER 15W-40 Revision Date: 09 Apr 2013 Page 2 of 10



adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5

FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Sulfur oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: >215°C (419°F) [ASTM D-92] Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0 Autoignition Temperature: N/D

SECTION 6

ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.



Product Name: MOBIL DELVAC 1300 SUPER 15W-40 Revision Date: 09 Apr 2013 Page 3 of 10

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Avoid contact with used product. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. Do not store in open or unlabelled containers.



Product Name: MOBIL DELVAC 1300 SUPER 15W-40 Revision Date: 09 Apr 2013 Page 4 of 10

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.



Product Name: MOBIL DELVAC 1300 SUPER 15W-40 Revision Date: 09 Apr 2013 Page 5 of 10

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid Color: Amber Odor: Characteristic Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.874 Flash Point [Method]: >215°C (419°F) [ASTM D-92] Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0 Autoignition Temperature: N/D Boiling Point / Range: > 316°C (600°F) Vapor Density (Air = 1): N/D Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C Evaporation Rate (n-butyl acetate = 1): N/D pH: N/A Log Pow (n-Octanol/Water Partition Coefficient): > 3.5 Solubility in Water: Negligible Viscosity: 113 cSt (113 mm2/sec) at 40 °C | 15 cSt (15 mm2/sec) at 100°C Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D Melting Point: N/A Pour Point: -27°C (-17°F) DMSO Extract (mineral oil only), IP-346: < 3 %wt Decomposition Temperature: N/D

SECTION 10

STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.



TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

SECTION 11

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on
	assessment of the components.
Eye	
Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on
	assessment of the components.

CHRONIC/OTHER EFFECTS

For the product itself:

Diesel engine oils: Not carcinogenic in animals tests. Used and unused diesel engine oils did not produce any carcinogenic effects in chronic mouse skin painting studies.

Oils that are used in gasoline engines may become hazardous and display the following properties: Carcinogenic in animal tests. Caused mutations in vitro. Possible allergen and photoallergen. Contains polycyclic aromatic compounds (PAC) from combustion products of gasoline and/or thermal degradation products.

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

The following ingredients are cited on the lists below: None.

	REGULATORY LISTS SEARCHED			
1 = NTP CARC	3 = IARC 1	5 = IARC 2B		
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC		

SECTION 12

The information given is based on data available for the material, the components of the material, and similar materials.

ECOLOGICAL INFORMATION

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.



Product Name: MOBIL DELVAC 1300 SUPER 15W-40 Revision Date: 09 Apr 2013 Page 7 of 10

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13

DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14

TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport



SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA): Not Regulated for Air Transport

SECTION 15

REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

Complies with the following national/regional chemical inventory requirements: DSL, KECI, PICCS, TSCA Special Cases:

Inventory	Status
AICS	Restrictions Apply
IECSC	Restrictions Apply

EPCRA SECTION 302: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
DIPHENYLAMINE	122-39-4	18

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16	OTHER INFORMATION	
N/D = Not determined, N	A = Not applicable	

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes: Section 06: Protective Measures was modified.



Product Name: MOBIL DELVAC 1300 SUPER 15W-40 Revision Date: 09 Apr 2013 Page 9 of 10

Section 01: Company Contact Methods Sorted by Priority was modified. Section 09: Boiling Point C(F) was modified. Section 09: Pour Point C(F) was modified. Section 08: Comply with applicable regulations phrase was modified. Section 09: Vapor Pressure was modified. Hazard Identification: Health Hazards was modified. Section 11: Dermal Lethality Test Data was modified. Section 11: Dermal Lethality Test Comment was modified. Section 11: Oral Lethality Test Data was modified. Section 11: Inhalation Lethality Test Data was modified. Section 11: Dermal Irritation Test Data was modified. Section 11: Eye Irritation Test Data was modified. Section 11: Oral Lethality Test Comment was modified. Section 11: Inhalation Lethality Test Comment was modified. Section 11: Dermal Irritation Test Comment was modified. Section 11: Eye Irritation Test Comment was modified. Section 11: Inhalation Irritation Test Data was modified. Section 09: Relative Density - Header was modified. Section 09: Flash Point C(F) was modified. Section 09: Viscosity was modified. Section 09: Viscosity was modified. Section 14: LAND (TDG) - Header was modified. Section 15: List Citations Table was modified. Section 11: Inhalation Lethality Test Comment was modified. Section 15: National Chemical Inventory Listing - Header was modified. Section 15: National Chemical Inventory Listing was modified. Section 15: Community RTK - Header was modified. Section 11: Additional Health Information was modified. Section 08: Exposure limits/standards was modified. Section 15: Special Cases Table was modified. Section 01: Product Code was modified. The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate

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DGN: 2003305XUS (1012124)

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Product Name: MOBIL DELVAC 1300 SUPER 15W-40 Revision Date: 09 Apr 2013 Page 10 of 10



MATERIAL SAFETY DATA SHEET

(SOLAS regulation VI/5-1 format)

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

 Product Name:
 GASOLINE

 Product Description:
 Hydrocarbons and Additives

 Product Code:
 708439

 Intended Use:
 Fuel

 MARPOL Annex I Category:
 Gasoline and spirits

 See Section 14 for transportation information related to the Bill of Lading, other shipping documents

COMPANY IDENTIFICATION

Country	Company	Emergency Telephone Number
International Sales	ExxonMobil Marine Fuels	(UK) (+44) (0) 23 8089 1558
	Ermyn House	
	MP 31 Ermyn Way	
	Leatherhead, KT22 8UX UK	
Australia	MOBIL OIL AUSTRALIA PTY LTD	+1 609 737 4411
	A.B.N. 88 004 052 984	
	12 Riverside Quay	
	Southbank	
	Victoria 3006 Australia	
Belgium	ExxonMobil Petroleum & Chemical BVBA	+32 (0) 487 545 780
-	Polderdijkweg	
	Haven 447 - 2030	
	Antwerpen, Belgium	
Canada	Imperial Oil	1-866-232-9563
	505 Quarry Park Boulevard SE	
	Calgary, AB T2C 5N1 Canada	
Fiji	Mobil Oil Australia Pty Ltd - t/a Mobil Oil Fiji	+1 609 737 4411
	Level 6, ANZ House,	
	25 Victoria Parade,	
	Suva, Fiji Islands	
France	Esso SAF	+33 08 1000 3353
	Tour Manhattan La Defense 2	
	5/6 Place de l'Iris	
	92400 Courbevoie France	
Hong Kong	ExxonMobil Hong Kong Limited:	+1 609 737 4411
	2201, 22/F, Central Plaza	
	18 Harbour Road, Wanchai, Hong Kong	
Italy	Esso Italiana SRL	+39 0382 24444
-	Viale Castello della Magliana 25	
	Rome 00148 Italy	
New Zealand	Mobil Oil New Zealand Limited	National Poison Center +64 3 479 7248
	Vero Centre	Freephone 0800 764 766
	48 Shortland Street	
	Auckland 1140	



Product Name: GASOLINE Revision Date: 19 Jul 2019 Page 2 of 15

	New Zealand	
Norway	Esso Norge AS Drammensveien 149 Skøyen N-0213 Oslo, Norway	Emergency: (NO) +47 33 37 73 00 Poison: (NO) +47 22 59 13 00
Singapore	ExxonMobil Asia Pacific Pte Limited 1 HarbourFront Place #06-00 HarbourFront Tower One Singapore 098633	01-609-737-4411
Thailand	Esso (Thailand) Public Company Limited 3195/17-29 Rama 4 Road, Klong Ton, Klong Toey District Bangkok, Thailand 10110	+1-609-737-4411
United Kingdom	Esso Petroleum Company Limited Ermyn House MP 31 Ermyn Way Leatherhead, KT22 8UX UK	+32 (0) 487 545 780
United States	ExxonMobil Oil Corporation 22777 Springwoods Village Parkway Spring, TX 77389 USA	+1 609 737 4411

This (M)SDS is a document with no country specific information included.

SECTION 2

HAZARDS IDENTIFICATION

This material is hazardous according to UN GHS Criteria. Classification includes all GHS hazard classes. For hazard categories with two cut-off/concentration limits, classification was based on the higher limit.

GHS CLASSIFICATION:

Flammable liquid: Category 1. Skin irritation: Category 2. Germ Cell Mutagen: Category 1B. Carcinogen: Category 1B. Reproductive toxicant (developmental): Category 2. Specific target organ toxicant (central nervous system): Category 3. Aspiration toxicant: Category 1. Acute aquatic toxicant: Category 2. Chronic aquatic toxicant: Category 2.

GHS Label Elements: Pictogram:



Signal Word: Danger

Hazard Statements:

Physical: H224: Extremely flammable liquid and vapour.

Health: H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H336: May cause drowsiness or dizziness. H340: May cause genetic defects. H350: May cause cancer. H361: Suspected



Product Name: GASOLINE Revision Date: 19 Jul 2019 Page 3 of 15

of damaging the unborn child. Environmental: H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements:

- Prevention: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P210: Keep away from heat/sparks/open flames/hot surfaces. -- No smoking.
 P233: Keep container tightly closed. P240: Ground/bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating and lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P261: Avoid breathing mist / vapours. P264: Wash skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection.
- Response: P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308 + P313: IF exposed or concerned: Get medical advice/attention. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P331: Do NOT induce vomiting. P332 + P313: If skin irritation occurs: Get medical advice/attention. P362 + P364: Take off contaminated clothing and wash it before reuse. P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish. P391: Collect spillage. Storage: P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up. Disposal: P501: Dispose of contents and container in accordance with local regulations.

Contains: GASOLINE

Other hazard information:

PHYSICAL / CHEMICAL HAZARDS

Material can accumulate static charges which may cause an ignition. Material can release vapours that readily form flammable mixtures. Vapour accumulation could flash and/or explode if ignited. Small leaks of this material can result in groundwater contamination levels above taste and odor thresholds for ether oxygenates (methyl tertiary butyl ether, ethyl tertiary butyl ether, tertiary amyl methyl ether or diisopropyl ether). Groundwater becomes unpalatable well below ether oxygenate concentrations that could affect human health.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. May be irritating to the eyes, nose, throat, and lungs. Exposure to benzene is associated with cancer (acute myeloid leukaemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders (see Section 11).

ENVIRONMENTAL HAZARDS

Ether oxygenates are significantly more soluble than other components of gasoline like benzene, toluene, ethyl benzene and xylenes (BTEX) if released into groundwater. Ether oxygenates may also biodegrade more slowly, have the potential to move farther and faster in groundwater and have the potential to contaminate larger areas of groundwater than BTEX if released into groundwater.

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3

COMPOSITION / INFORMATION ON INGREDIENTS



Product Name: GASOLINE Revision Date: 19 Jul 2019 Page 4 of 15

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
ETHYL ALCOHOL	64-17-5	0 - 5%	H225, H319(2A)
ETHYL TERT-BUTYL ETHER	637-92-3	0 - 15%	H225, H336, H402
GASOLINE	86290-81-5	> 85 %	H224, H304, H336, H340(1B), H350(1B), H361(D), H315, H401, H411
ISOBUTYL ALCOHOL	78-83-1	0 - 10%	H226, H335, H336, H315, H318
ISOPROPYL ALCOHOL	67-63-0	0 - 10%	H225, H305, H336, H319(2A)
METHYL ALCOHOL	67-56-1	0 - < 3%	H225, H301, H311, H331, H370
METHYL-TERT-BUTYL ETHER	1634-04-4	0 - 15%	H225, H303, H305, H315
TERT-BUTYL ALCOHOL	75-65-0	0 - 7%	H225, H303, H305, H332, H335, H336

Hazardous Constituent(s) Contained in Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
Benzene	71-43-2	0.1 - 1.0%	H225, H303, H304, H340(1B), H350(1A), H315, H319(2A), H372, H401
Toluene	108-88-3	> 5.0 %	H225, H304, H336, H361(D), H315, H373, H401, H412

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

NOTE:Oxygenates may be present up to the maximum permitted by European StandardEN228.SECTION 4FIRST AID MEASURES

INHALATION

Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

ACUTE AND DELAYED SYMPTOMS/EFFECTS

See Toxicological Section



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NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. This material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided.

SECTION 5

FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop a leak. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Extremely Flammable. Vapour is flammable and heavier than air. Vapour may travel across the ground and reach remote ignition sources, causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: <-35°C (-31°F) [IP 170/70]</th>Flammable Limits (Approximate volume % in air):LEL: 1.4UEL: 7.6Autoignition Temperature:>250°C (482°F)

SECTION 6

ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H2S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an



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oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapour-suppressing foam may be used to reduce vapour. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapour, but may not prevent ignition in enclosed spaces.

Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken. This product contains ether oxygenates and it is important to respond quickly to any spills or leaks. Even a small release, if not quickly cleaned up, can contaminate large volumes of surface or groundwater. Personnel handling, transferring or dispensing this product should be trained to respond immediately to any spills or leaks to prevent contamination of groundwater.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Avoid all personal contact. Prevent exposure to ignition sources, for example use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapour may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put petrol into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapour and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices etc) in or around any fuelling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).



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Static Accumulator: This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

STORAGE

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. The type of container used to store the material may affect static accumulation and dissipation. Consistent with regulatory control requirements, storage and handling equipment and systems should be capable of preventing soil and groundwater contamination by liquid spills and vapor emissions. Leak detection systems and programs are recommended. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Keep away from incompatible materials. Storage containers should be earthed and bonded. Fixed storage containers, transfer containers and associated equipment should be earthed and bonded to prevent accumulation of static charge.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Substance Name	Form	Limit/S	tandard		Note	Source	Year
Benzene		TWA	3.25	1 ppm	Skin	EU. Dir.	2017
			mg/m3			04/37/EC	
						Annex III A	
Benzene		STEL	1 ppm			ExxonMobil	2019
Benzene		TWA	0.5 ppm			ExxonMobil	2019
ETHYL ALCOHOL		STEL	1000 ppm			ACGIH	2018
ETHYL TERT-BUTYL ETHER		TWA	25 ppm			ACGIH	2018
GASOLINE		STEL	200 ppm			ExxonMobil	2019
GASOLINE		TWA	100 ppm			ExxonMobil	2019
ISOBUTYL ALCOHOL		TWA	50 ppm			ACGIH	2018
ISOPROPYL ALCOHOL		STEL	400 ppm			ACGIH	2018
ISOPROPYL ALCOHOL		TWA	200 ppm			ACGIH	2018
METHYL ALCOHOL		STEL	250 ppm		Skin	ACGIH	2018
METHYL ALCOHOL		TWA	200 ppm		Skin	ACGIH	2018
METHYL-TERT-BUTYL ETHER		TWA	50 ppm			ACGIH	2018
TERT-BUTYL ALCOHOL		TWA	100 ppm			ACGIH	2018
Toluene		TWA	20 ppm			ACGIH	2018

Exposure limits/standards (Note: Exposure limits are not additive)

Biological limits

Substance Name	Specimen	Sampling Time	Limit	Determinant	Source
Benzene	Creatinine in urine	End of shift	500 ug/g	t,t-Muconic acid	ACGIH BELs (BEIs)



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Benzene	Creatinine in urine	End of shift	25 ug/g	S-Phenylmercapturic acid	ACGIH BELs (BEIs)
ISOPROPYL ALCOHOL	Urine	End of shift at end of work wk	40 mg/l	Acetone	ACGIH BELs (BEIs)
METHYL ALCOHOL	Urine	End of shift	15 mg/l	Methanol	ACGIH BELs (BEIs)
Toluene	Blood	Prior to last shift of work wk	0.02 mg/l	Toluene	ACGIH BELs (BEIs)
Toluene	Creatinine in urine	End of shift	0.3 mg/g	o-Cresol, with hydrolysis	ACGIH BELs (BEIs)
Toluene	Urine	End of shift	0.03 mg/l	Toluene	ACGIH BELs (BEIs)

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. Nitrile, Viton

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include: Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after



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handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

Consistent with regulatory control requirements, storage and handling equipment and systems should be capable of preventing soil and groundwater contamination by liquid spills and vapor emissions. Leak detection systems and programs are recommended. Personnel handling, transferring or dispensing this product should be trained to respond immediately to any spills or leaks to prevent contamination of groundwater.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State:LiquidColour:Pale YellowOdour:CharacteristicOdour Threshold:N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): < 1 Density (at 15 °C): 620 kg/m3 (5.17 lbs/gal, 0.62 kg/dm3) - 880 kg/m3 (7.34 lbs/gal, 0.88 kg/dm3) Flammability (Solid, Gas): N/A Flash Point [Method]: <-35°C (-31°F) [IP 170/70] Flammable Limits (Approximate volume % in air): LEL: 1.4 **UEL: 7.6** Autoignition Temperature: >250°C (482°F) **Boiling Point / Range:** 28°C (82°F) - 210°C (410°F) [ASTM D86] Decomposition Temperature: N/D Vapour Density (Air = 1): > 1 at 101 kPa Vapour Pressure: [N/D at 20°C] | 4 kPa (30 mm Hg) at 37.8 °C - 240 kPa (1800 mm Hg) at 37.8 °C Evaporation Rate (n-butyl acetate = 1): N/D pH: N/A Log Pow (n-Octanol/Water Partition Coefficient): > 3.5 **Solubility in Water:** Negligible for the hydrocarbon components. Ether oxygenates are significantly more soluble. Viscosity: <1 cSt (1 mm2/sec) at 40°C **Oxidizing Properties:** See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D Melting Point: N/D



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SECTION 10

STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Heat, sparks, flame, and build up of static electricity.

MATERIALS TO AVOID: Alkalies, Halogens, Strong Acids, Strong oxidisers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks		
Inhalation			
Toxicity (Rat): LC50 > 5000 mg/m3	Minimally Toxic. Based on test data for structurally similar materials.		
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.		
Ingestion			
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.		
Skin			
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.		
Irritation (Rabbit): Data available.	Irritating to the skin. Based on test data for structurally similar materials.		
Еуе			
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.		

OTHER HEALTH EFFECTS FROM SHORT AND LONG TERM EXPOSURE

Anticipated health effects from sub-chronic, chronic, respiratory or skin sensitization, mutagenicity, reproductive toxicity, carcinogenicity, target organ toxicity (single exposure or repeated exposure), aspiration toxicity and other effects based on human experience and/or experimental data.

For the product itself:

Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon vapours in the same boiling range as this product can produce adverse kidney effects in male rats. However, these effects were not observed in similar studies with female rats, male and female mice, or in limited studies with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. In 1991, The U.S. EPA determined that the male rat kidney is not useful for assessing human risk. Vapour concentrations above recommended exposure levels are irritating to the

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eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Exposure to this material, or one of its components, in situations where there is the potential for high levels, such as in confined spaces or with abuse, may result in abnormal heart rhythm (arrhythmia). High-level exposure to hydrocarbons (above occupational exposure limits) may initiate arrhythmia in a worker that is undergoing stress or is taking a heart-stimulating substance such as epinephrine, a nasal decongestant, or an asthma or cardiovascular drug. Gasoline unleaded: Carcinogenic in animal tests. Chronic inhalation studies resulted in liver tumours in female mice and kidney tumours in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations in-vitro or in-vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing).

BENZENE: Caused cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the bloodproducing system, and serious blood disorders in human studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus and cancer in laboratory animal studies. ETHANOL: Prolonged or repeated exposure to high concentrations of ethanol vapour or overexposure by ingestion may produce adverse effects to brain, kidney, liver, and reproductive organs, birth defects in offspring, and developmental toxicity in offspring. METHANOL: Human exposure to methanol may result in illness, systemic poisoning, blindness, optic nerve damage and perhaps death, after being ingested, absorbed through the skin or inhaled. Death due to cardiac or respiratory failure has been reported in some cases from consumption of as little as 30 mls. Exposure to high concentrations of methanol has been shown to cause developmental effects in rodent offspring.

Methyl tertiary butyl ether (MTBE): Carcinogenic in animal tests. Inhalation exposure to high concentrations resulted in higher than expected mortality in male mice due to urinary tract obstructions and female mice displayed benign liver tumors. Inhalation exposure to high concentrations resulted in higher than expected mortality in male rats due to progressive kidney damage as well as increased benign and malignant kidney tumors, and benign testicular tumors. Drinking water exposure to high concentrations resulted in progressive kidney damage in rats and a marginally increased statistical trend of brain tumors in male rats. Tumor incidence was within historical control levels and concluded to not be related to MTBE exposure. Did not cause mutations In Vitro or In vivo. Rabbits exposed to high vapor concentrations (maternally toxic) had offspring with adverse developmental effects. Mice exposed to high vapor concentrations did not display any treatment-related effects in a two generation reproduction study. The significance of the animal findings at high exposures are not believed to be directly related to potential human health hazards. TOLUENE : Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects.

IARC Classification: The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
Benzene	71-43-2	1
GASOLINE	86290-81-5	3

--REGULATORY LISTS SEARCHED--

3 = IARC 2B

2 = IARC 2A



SECTION 12

ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

Majority of components -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Low molecular wt. component -- Moderate potential to migrate through soil.

High molecular wt. component -- Low potential to migrate through soil.

Components -- Ether oxygenates are significantly more soluble than other components of gasoline like benzene, toluene, ethyl benzene and xylenes (BTEX) if released into groundwater. Ether oxygenates have the potential to move farther and faster in groundwater and have the potential to contaminate larger areas of groundwater than BTEX if released into groundwater.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be inherently biodegradable

Components -- Ether oxygenates may biodegrade slowly.

Atmospheric Oxidation:

Majority of components -- Expected to degrade rapidly in air

BIOACCUMULATION POTENTIAL

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EL50 1 - 100 mg/l: data for similar
			materials
Aquatic - Acute Toxicity	96 hour(s)	Fish	LL50 1 - 100 mg/l: data for similar
			materials
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella	EL50 1 - >1000 mg/l: data for similar
		subcapitata	materials
Aquatic - Chronic Toxicity	21 day(s)	Daphnia magna	NOELR 1 - 10 mg/l: data for similar
			materials
Aquatic - Chronic Toxicity	72 hour(s)	Pseudokirchneriella	NOELR 1 - 100 mg/l: data for similar
-		subcapitata	materials

Persistence, Degradability and Bioaccumulation Potential



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Media	Test Type	Duration	Test Results
Water Ready Biodegradability		28 day(s)	Percent Degraded < 60 :
			similar material

INTERNATIONAL OIL POLLUTION COMPENSATION (IOPC)

Material is considered a non-persistent oil.

SECTION 13	DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

SEA (IMDG)

MOTOR SPIRIT or GASOLINE or PETROL **Proper Shipping Name:** Hazard Class & Division: 3 EMS Number: F-E. S-E UN Number: 1203 Packing Group: Ш Marine Pollutant: Yes Label(s): 3 **Transport Document Name:** UN1203, MOTOR SPIRIT or GASOLINE or PETROL, 3, PG II, (-35°C c.c.), MARINE POLLUTANT

Note - this material is being carried under the scope of MARPOL Annex I

SECTION 15

REGULATORY INFORMATION

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories (May contain substance(s) subject to notification to the EPA Active TSCA inventory prior to import to USA): KECI,



NDSL, TSCA

SECTION 16

OTHER INFORMATION

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

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

H224: Extremely flammable liquid and vapor; Flammable Liquid, Cat 1

H225: Highly flammable liquid and vapor; Flammable Liquid, Cat 2

H226: Flammable liquid and vapour; Flammable Liquid, Cat 3

H301: Toxic if swallowed; Acute Tox Oral, Cat 3

H303: May be harmful if swallowed; Acute Tox Oral, Cat 5

H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1

H305: May be harmful if swallowed and enters airways; Aspiration, Cat 2

H311: Toxic in contact with skin; Acute Tox Dermal, Cat 3

H315: Causes skin irritation; Skin Corr/Irritation, Cat 2

H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1

H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A

H331: Toxic if inhaled; Acute Tox Inh, Cat 3

H332: Harmful if inhaled; Acute Tox Inh, Cat 4

H335: May cause respiratory irritation; Target Organ Single, Resp Irr

H336: May cause drowsiness or dizziness; Target Organ Single, Narcotic

H340(1B): May cause genetic defects; Germ Cell Mutagenicity, Cat 1B

H350(1A): May cause cancer; Carcinogenicity, Cat 1A

H350(1B): May cause cancer; Carcinogenicity, Cat 1B

H361(D): Suspected of damaging the unborn child; Repro Tox, Cat 2 (Develop)

H370: Causes damage to organs; Target Organ, Single, Cat 1

H372: Causes damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 1

H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2

H401: Toxic to aquatic life; Acute Env Tox, Cat 2

H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

THIS MATERIAL SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Composition: Component Table information was modified.

GHS Physical Hazards information was modified.

GHS Precautionary Statements - Prevention information was modified.

Hazard Identification: Physical/Chemical Hazard information was modified.

Section 01: IMO R&S Emergency Numbers information was modified.

Section 04: First Aid Notes information was modified.

Section 05: Fire Fighting Measures - Fire Fighting Instruction information was modified.

Section 06: Accidental Release - Spill Management - Water information was modified.

Section 06: Protective Measures information was modified.

Section 06: Spill Management Recommendations - Default information was modified.

Section 07: Handling and Storage - Handling information was modified.

Section 07: Handling and Storage - Storage Phrases information was modified.

Section 08: Biological Limits - Table information was modified.

Section 08: Exposure Limits Table information was modified.

Section 10: Materials To Avoid information was modified.

Section 11: Chronic Tox - Component information was modified.

Section 11: Other Health Effects information was modified.



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Section 11: Tox List Cited Table information was modified. Section 12: Environmental tox table in section 12 information was modified. Section 12: information was modified. Revision Date: 19 Jul 2019

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DGN: 7095877I (1017738)

SAFETY DATA SHEET



Section 1. Identification **Product name** Hydraulic Oil 32 401106 SDS # 401106-US12 Code Relevant identified uses of the substance or mixture and uses advised against **Product use** Hydraulic fluid For specific application advice see appropriate Technical Data Sheet or consult our company representative. **Supplier** BP Lubricants USA Inc. 1500 Valley Road Wayne, NJ 07470 Telephone: +1-888-CASTROL Product Information: +1-877-641-1600 **EMERGENCY HEALTH** +1-800-447-8735 **INFORMATION: EMERGENCY SPILL** +1-800-424-9300 (CHEMTREC USA) **INFORMATION:** +1-703-527-3887 (CHEMTREC outside the US)

Section 2. Hazards identification

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	Not classified.	
GHS label elements		
Signal word	No signal word.	
Hazard statements	Izard statements No known significant effects or critical hazards.	
Precautionary statements		
Prevention	Not applicable.	
Response	Not applicable.	
Storage	Not applicable.	
Disposal	Not applicable.	
Hazards not otherwise classified	Defatting to the skin. Note: High Pressure Applications Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. See 'Notes to physician' under First-Aid Measures. Section 4 of this Safety Data Sheet	

Section 3. Composition/information on ingredients

Substance/mixture Mixture

Highly refined mineral oil (IP 346 DMSO extract < 3%).

Ingredient name	CAS number	%
Sistillates (petroleum), hydrotreated heavy paraffinic Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7 64742-54-7	≥50 - ≤75 ≥25 - ≤50

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Product name	Hydraulic Oil 32	Product code	401106-US12	Page: 1/9
Version 4	Date of issue 08/01/2019.	Format US	Languag	je ENGLISH

Section 3. Composition/information on ingredients

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 and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.	
Skin contact	Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thorough before reuse. Get medical attention if symptoms occur.	
Inhalation	If inhaled, remove to fresh air. Get medical attention if symptoms occur.	
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.	
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.	

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate me	edical attention and special treatment needed, if necessary
Notes to physician	Treatment should in general be symptomatic and directed to relieving any effects.
	Note: High Pressure Applications Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discolored and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimize tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.
Specific treatments	No specific treatment.

Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.
Unsuitable extinguishing media	Do not use water jet.
Specific hazards arising from the chemical	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	Combustion products may include the following: carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide)
Special protective actions for fire-fighters	No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.
Special protective equipment for fire-fighters	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Section 6. Accidental release measures

Personal precautions, protectiv	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. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.		
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 cont	ainment and cleaning up		
Small spill	Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.		
Large spill	Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. 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. Dispose of via a licensed waste disposal contractor.		

Section 7. Handling and storage

Precautions for safe handling	
Protective measures	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. 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. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
₱istillates (petroleum), hydrotreated heavy paraffinic	ACGIH TLV (United States). TWA: 5 mg/m ³ 8 hours. Issued/Revised: 11/2009 Form: Inhalable fraction OSHA PEL (United States). TWA: 5 mg/m ³ 8 hours. Issued/Revised: 6/1993
Distillates (petroleum), hydrotreated heavy paraffinic	ACGIH TLV (United States). TWA: 5 mg/m ³ 8 hours. Issued/Revised: 11/2009 Form: Inhalable fraction OSHA PEL (United States). TWA: 5 mg/m ³ 8 hours. Issued/Revised: 6/1993

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Section 8. Exposure controls/personal protection

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Appropriate engineering controls	All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards. Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Individual protection 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 glasses with side shields.
Skin protection	
Hand protection	Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.
Body protection	Use of protective clothing is good industrial practice. 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. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.
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	In case of insufficient ventilation, wear suitable respiratory equipment. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

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Section 9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Color	Brown.
Odor	Not available.
Odor threshold	Not available.
рН	Not available.
Melting point	Not available.
Boiling point	Not available.
Flash point	Closed cup: >210°C (>410°F) [Pensky-Martens.]
Pour point	<-30 °C
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable. Based on - Physical state
Lower and upper explosive (flammable) limits	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Density	<1000 kg/m³ (<1 g/cm³) at 15°C
Solubility	insoluble in water.
Partition coefficient: n- octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Kinematic: 32.5 mm²/s (32.5 cSt) at 40°C Kinematic: 5.5 mm²/s (5.5 cSt) at 100°C

Section 10. Stability and reactivity

Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame).
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 Aspiration hazard Name Result Distillates (petroleum), hydrotreated heavy paraffinic ASPIRATION HAZARD - Category 1 Information on the likely Routes of entry anticipated: Dermal, Inhalation. routes of exposure Potential acute health effects Eye contact No known significant effects or critical hazards. Product code 401106-US12 Page: 5/9 Product name Hydraulic Oil 32 Version 4 Date of issue 08/01/2019. Format US Language ENGLISH

Section 11. Toxicological information

Skin contact	No known significant effects or critical hazards.
Inhalation	Vapor inhalation under ambient conditions is not normally a problem due to low vapor pressure.
Ingestion	No known significant effects or critical hazards.
Symptoms related to the phys	ical, chemical and toxicological characteristics
Eye contact	No specific data.
Skin contact	Adverse symptoms may include the following: irritation dryness cracking
Inhalation	No specific data.
Ingestion	No specific data.
Delayed and immediate effect	s and also chronic effects from short and long term exposure
Potential immediate effects	Not available.
Potential delayed effects	Not available.
Long term exposure	
Potential immediate effects	Not available.
Potential delayed effects	Not available.
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 Not available.

Section 12. Ecological information

Toxicity

No testing has been performed by the manufacturer.

Persistence and degradability

Not expected to be rapidly degradable.

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Mobility in soil

Mobility

Soil/water partition

coefficient (Koc)

Not available.

Spillages may penetrate the soil causing ground water contamination.

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Section 12. Ecological information

Other adverse effects

No known significant effects or critical hazards.

Other ecological information

Spills may form a film on water surfaces causing physical damage to organisms. Oxygen

transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	ΙΑΤΑ
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	-	-	-	-

Special precautions for user Not available.

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

All components are active or exempted.

(TSCA 8b) SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification SARA 313

Not applicable.

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Section 15. Regulatory information

Form R - Reporting requirements	This product does not contain any hazardous ingredients at or above regulated thresholds.
Supplier notification	This product does not contain any hazardous ingredients at or above regulated thresholds.
State regulations	
Massachusetts	The following components are listed: OIL MIST, MINERAL; OIL MIST, MINERAL
New Jersey	None of the components are listed.
Pennsylvania	None of the components are listed.
California Prop. 65	

WARNING: This product can expose you to chemicals including Lead, Cadmium and Ethylene oxide, which are known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Ethyl acrylate, Arsenic, Propylene oxide and 1,4-Dioxane, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Other regulations

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Australia inventory (AICS)	All components are listed or exempted.
Canada inventory	All components are listed or exempted.
China inventory (IECSC)	All components are listed or exempted.
Japan inventory (ENCS)	All components are listed or exempted.
Korea inventory (KECI)	All components are listed or exempted.
Philippines inventory (PICCS)	All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI)	All components are listed or exempted.
REACH Status	For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

National Fire Protection Association (U.S.A.)

	Flammability
Health 10	Instability/Reactivity
	Special
<u>History</u>	
Date of issue/Date of revision	08/01/2019.
Date of previous issue	05/22/2019.
Prepared by	Product Stewardship
Key to abbreviations	ACGIH = American Conference of Industrial Hygienists ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor CAS Number = Chemical Abstracts Service Registry Number GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Internediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) OEL = Occupational Exposure Limit SDS = Safety Data Sheet STEL = Short term exposure limit TWA = Time weighted average UN = United Nations UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.
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Section 16. Other information

Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

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SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: JET A Product Description: Hydrocarbons and Additives 121012-60, 97F965 Product Code: Intended Use: Aviation fuel

Trade Names	Trade Names
Turbo Fuel A, Turbo Fuel A-1	Turbo Fuel A-1

COMPANY IDENTIFICATION

Supplier:

EXXON MOBIL CORPORATION

22777 Springwoods Village Parkway Spring, TX 77389 USA

24 Hour Health Emergency Transportation Emergency Phone **Product Technical Information MSDS Internet Address**

609-737-4411 800-424-9300 or 703-527-3887 CHEMTREC 800-662-4525 www.exxon.com, www.mobil.com

SECTION 2

HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION:

Flammable liquid: Category 3. Skin irritation: Category 2. Specific target organ toxicant (central nervous system): Category 3. Aspiration toxicant: Category 1.

LABEL: Pictogram:



Signal Word: Danger

Product Name: JET A Revision Date: 29 Jul 2019 Page 2 of 14



Hazard Statements:

H226: Flammable liquid and vapor. H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H336: May cause drowsiness or dizziness.

Precautionary Statements:

P210: Keep away from heat/sparks/open flames/hot surfaces. -- No smoking. P233: Keep container tightly closed. P240: Ground / bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating, and lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P261: Avoid breathing mist / vapours. P264: Wash skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves and eye / face protection.P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P331: Do NOT induce vomiting. P332 + P313: If skin irritation occurs: Get medical advice/ attention. P362 + P364: Take off contaminated clothing and wash it before reuse. P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish. P391: Collect spillage.P403 + P235: Store in a wellventilated place. Keep cool. P405: Store locked up.P501: Dispose of contents and container in accordance with local regulations.

Contains: Kerosine (petroleum)

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. May be irritating to the eyes, nose, throat, and lungs. Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.

ENVIRONMENTAL HAZARDS

Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID:	Health:	2	Flammability:	2	Reactivity:	0
HMIS Hazard ID:	Health:	2	Flammability:	2	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3

COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.



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Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#		GHS Hazard Codes
		Concentration*	
Kerosine (petroleum)	8008-20-6	> 99 %	H226, H304, H336, H315,
			H401, H411

Hazardous Constituent(s) Contained in Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
ETHYL BENZENE	100-41-4	0.1 - 1%	H225, H304, H332, H373,
			H401, H412
NAPHTHALENE	91-20-3	< 1%	H228(2), H302, H351,
			H400(M factor 1), H410(M
			factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4

FIRST AID MEASURES

INHALATION

Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

Contains hydrocarbon solvent/petroleum hydrocarbons; skin contact may aggravate an existing dermatitis.

SECTION 5

FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.



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Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Flammable. Hazardous material. Firefighters should consider protective equipment indicated in Section 8. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >38°C (100°F) [ASTM D-93] Flammable Limits (Approximate volume % in air): LEL: 0.7 UEL: 5.0 Autoignition Temperature: 250°C (482°F) [ASTM E659]

SECTION 6

ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H2S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large



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Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Water Spill: Stop leak if you can do it without risk. Eliminate sources of ignition. Warn other shipping. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

HANDLING AND STORAGE

HANDLING

SECTION 7

Avoid all personal contact. Do not siphon by mouth. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES



Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Sta	ndard		NOTE	Source
ETHYL BENZENE		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		TWA	20 ppm		N/A	ACGIH
Kerosine (petroleum)	Stable Aerosol.	TWA	5 mg/m3		Skin	ExxonMobil
Kerosine (petroleum)	Vapor.	TWA	200 mg/m3		Skin	ExxonMobil
Kerosine (petroleum) [as total hydrocarbon vapor]	Non-Aerosol	TWA	200 mg/m3		Skin	ACGIH
NAPHTHALENE		TWA	50 mg/m3	10 ppm	N/A	OSHA Z1
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

Biological limits

Substance	Specimen	Sampling Time	Limit	Determinant	Source
ETHYL BENZENE	Creatinine in	End of shift	0.15 g/g	Sum of mandelic acid	ACGIH BELs
	urine			and phenylglyoxylic acid	(BEIs)
NAPHTHALENE	No Biological	End of shift	Not	1-Naphthol, with	ACGIH BELs
	Specimen		Assigned	hydrolysis + 2-Naphthol,	(BEIs)
	provided		_	with hydrolysis	

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove



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manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include: Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State:LiquidColor:Pale YellowOdor:Petroleum/SolventOdor Threshold:N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.775 - 0.83 Density (at 15 °C): 750 kg/m³ (6.26 lbs/gal, 0.75 kg/dm³) - 860 kg/m³ (7.18 lbs/gal, 0.86 kg/dm³) [ASTM D4052] Flammability (Solid, Gas): N/A Flash Point [Method]: >38°C (100°F) [ASTM D-93] Flammable Limits (Approximate volume % in air): LEL: 0.7 **UEL: 5.0** Autoignition Temperature: 250°C (482°F) [ASTM E659] **Boiling Point / Range:** > 200°C (392°F) [EN ISO 3405] Decomposition Temperature: N/D Vapor Density (Air = 1): N/D Vapor Pressure: < 0.133 kPa (1 mm Hg) at 20 °C [EN 13016-1] Evaporation Rate (n-butyl acetate = 1): N/D pH: N/A Log Pow (n-Octanol/Water Partition Coefficient): > 3.5 Solubility in Water: Nealiaible Viscosity: 1.1 cSt (1.1 mm2/sec) at 40 °C

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Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

SECTION 10

Freezing Point: $-47^{\circ}C(-53^{\circ}F) - -40^{\circ}C(-40^{\circ}F)$ **Melting Point:** N/A

STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Alkalies, Halogens, Strong Acids, Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11

TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks	
Inhalation		
Acute Toxicity: (Rat) 4 hour(s) LC50 > 5000 mg/m3 (Vapor)	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403	
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.	
Ingestion		
Acute Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 420	
Skin		
Acute Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 402	
Skin Corrosion/Irritation (Rabbit): Data available.	Irritating to the skin. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404	
Eye		
Serious Eye Damage/Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405	
Sensitization		
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.	
Skin Sensitization: Data available.	Not expected to be a skin sensitizer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406	
Aspiration: Data available.	May be fatal if swallowed and enters airways. Based on physico- chemical properties of the material.	
Germ Cell Mutagenicity: Data available. Not expected to be a germ cell mutagen. Based on test d		



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	structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 475 476 478 479
Carcinogenicity: Data available.	Not expected to cause cancer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 451
Reproductive Toxicity: Data available.	Not expected to be a reproductive toxicant. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 414 421
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	May cause drowsiness or dizziness.
Repeated Exposure: Data available.	Not expected to cause organ damage from prolonged or repeated exposure. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 410 412

TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
ETHYL BENZENE Inhalation Lethality: 4 hour(s) LC50 17.8 mg/l (Vapor	
	Lethality: LD50 3.5 g/kg (Rat)
NAPHTHALENE	Inhalation Lethality: 4 hour(s) LC50 > 0.4 mg/l (Max attainable
	vapor conc.) (Rat); Oral Lethality: LD50 533 mg/kg (Mouse)

OTHER INFORMATION

For the product itself:

Vapor/aerosol concentrations above recommended exposure levels are irritating to the eyes and respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects including death.

Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Repeated co-exposure to monoaromatic hydrocarbons contained in this product in excess of recognized occupational exposure limits and noise levels in excess of 85 dB(A) may increase the risk of hearing impairment.

Jet fuel: Some jet fuels have potential in mice to suppress indicators of immune system functionality. The relevance of these effects to humans is uncertain.

Contains:

Kerosene: Carcinogenic in animal tests. Lifetime skin painting tests produced tumors, but the mechanism is due to repeated cycles of skin damage and restorative hyperplasia. This mechanism is considered unlikely in humans where such prolonged skin irritation would not be tolerated. Did not cause mutations In vitro. Inhalation of vapors did not result in reproductive or developmental effects in laboratory animals. Inhalation of high concentrations in animals resulted in respiratory tract irritation, lung changes and some reduction in lung function. Non-sensitizing in animal tests.

NAPHTHALENE: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

ETHYLBENZENE: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.



The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ETHYL BENZENE	100-41-4	5
NAPHTHALENE	91-20-3	2, 5

	REGULATORY LISTS SE	ARCHED
1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

|--|

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

Majority of components -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Majority of components -- Low potential to migrate through soil.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be inherently biodegradable Atmospheric Oxidation:

Majority of components -- Expected to degrade rapidly in air

BIOACCUMULATION POTENTIAL

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EL50 1 - 100 mg/l: data for similar
			materials
Aquatic - Acute Toxicity	96 hour(s)	Oncorhynchus	LL50 1 - 100 mg/l: data for similar
		mykiss	materials
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella	EL50 1 - 100 mg/l: data for similar
-		subcapitata	materials



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Aquatic - Chronic Toxicity	21 day(s)	Daphnia magna	NOELR 0.48 mg/l: data for similar
			materials
Aquatic - Chronic Toxicity	72 hour(s)	Pseudokirchneriella	NOELR 1 - 10 mg/l: data for similar
		subcapitata	materials

Persistence, Degradability and Bioaccumulation Potential

Media	Test Type	Duration	Test Results
Water	Ready Biodegradability	28 day(s)	Percent Degraded < 60 : similar material

|--|

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14

TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE Hazard Class & Division: 3 **ID Number:** 1863 Packing Group: Ш Marine Pollutant: Yes ERG Number: 128 Label(s): 3 **Transport Document Name:** UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, PG III, MARINE POLLUTANT (Kerosene)

Footnote: The flash point of this material is greater than 100 F. Regulatory classification of this material varies. DOT: Flammable liquid or combustible liquid. OSHA: Combustible liquid. IATA/IMO: Flammable liquid.



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LAND (TDG) Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE Hazard Class & Division: 3 UN Number: 1863 Packing Group: 111 **Special Provisions:** 17 SEA (IMDG) **Proper Shipping Name:** FUEL, AVIATION, TURBINE ENGINE Hazard Class & Division: 3 EMS Number: F-E, S-E UN Number: 1863 Packing Group: Ш Marine Pollutant: Yes Label(s): 3 **Transport Document Name:** UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, PG III, (38°C c.c.), MARINE POLLUTANT (Kerosene) AIR (IATA) Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE

Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE Hazard Class & Division: 3 UN Number: 1863 Packing Group: III Label(s) / Mark(s): 3 Transport Document Name: UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, PG III

SECTION 15

REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TCSI, TSCA

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: Aspiration Hazard, Flammable (gases, aerosols, liquids, or solids), Skin Corrosion or Irritation, Specific Target Organ toxicity (single or repeated exposure)

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value



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ETHYL BENZENE	100-41-4	0.1 - 1%
NAPHTHALENE	91-20-3	< 1%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ETHYL BENZENE	100-41-4	1, 4, 10, 17, 19
Kerosine (petroleum)	8008-20-6	1, 18
NAPHTHALENE	91-20-3	1, 4, 10, 17, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16

OTHER INFORMATION

WARNING: Cancer - www.P65Warnings.ca.gov. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights.

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

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

H225: Highly flammable liquid and vapor; Flammable Liquid, Cat 2

H226: Flammable liquid and vapor; Flammable Liquid, Cat 3

H228(2): Flammable solid; Flammable Solid, Cat 2

H302: Harmful if swallowed; Acute Tox Oral, Cat 4

H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1

H315: Causes skin irritation; Skin Corr/Irritation, Cat 2

H332: Harmful if inhaled; Acute Tox Inh, Cat 4

H336: May cause drowsiness or dizziness; Target Organ Single, Narcotic

H351: Suspected of causing cancer; GHS Carcinogenicity, Cat 2

H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2

H400: Very toxic to aquatic life; Acute Env Tox, Cat 1

H401: Toxic to aquatic life; Acute Env Tox, Cat 2

H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Composition: Component Table information was modified.



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Section 04: First Aid Inhalation information was modified. Section 12: information was modified. Section 16: HCode Key information was modified.

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NFPA HMIS (U.S.A.) Rating Pro		Protective C	lothing	DOT (pictograms)				
Health 2 0 Reactivity Specific hazard		Health Hazard Fire Hazard Reactivity Personal Protection	2* 1 0 H	 Insignificant Slight Moderate High Extreme 				
Section I. Cher	nical Prod	uct and Company	Identifi	cation				
Product Name	ANTIF	REEZE				Code	W269	
			DSL	On the DSL.				
Synonym	Nonym Universal Antifreeze, Radiator Antifreeze, Diesel Antifreeze, Petro-Canada Antifreeze-Coolant, Petro-Canada Heavy Duty Antifreeze-Coolant, Pre-Mix Antifreeze, Petro-Canada Premium Radiator Antifreeze.			TSCA	On TSCA list.			
Manufacturer	anufacturer PETRO-CANADA P.O. Box 2844 Calgary, Alberta T2P 3E3		<u>In case of</u> Emergency	Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult				
Material Uses	Used as a	an engine antifreeze coolant.			emergency number(s).			

Section II. Composition and Information on Ingredients						
			E	cposure Limits (ACGIH))	
Name	CAS #	% (V/V)	TLV-TWA(8 h)	STEL	CEILING	
1) Ethylene glycol	107-21-1	≥55	Not established	Not established	100 mg/m ³ (aerosol)	
2) Sodium tetraborate pentahydrate	1330-43-4	<u>≤</u> 5	1 mg/m³	Not established	Not established	
Manufacturer Not applicable Recommendation						
Other Exposure Limits Consult local, state, provincial or territory authorities for acceptable exposure limits.						

Potential Health Contact can cause slight irritation of skin, eyes and respiratory tract. Extremely dangerous in case of ingestion. For m information, refer to Section 11.	more

Section IV. First A	id Measures
Eye Contact	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention.
Skin Contact	Remove contaminated clothing - launder before reuse. Wash gently and thoroughly the contaminated skin with running water and non-abrasive soap. Seek medical attention.
Inhalation	Evacuate the victim to a safe area as soon as possible. If the victim is not breathing, perform artificial respiration. Allow the victim to rest in a well ventilated area. Seek medical attention.
Ingestion	DO NOT induce vomiting because of danger of aspirating liquid into lungs. Seek medical attention.
Note to Physician	Not available

Section V. Fire-fighting Measures				
Flammability	May be combustible at high temperature. Flammable Limits Lower: 3.2%, Upper: 15.3%			
Flash Points	Closed Cup: 116ºC (Tagliabue) Open Cup: 116ºC (Cleveland)	413°C		
Fire Hazards in Presence of Various Substances	Combustible in presence of open flames and sparks. Explosion Hazards Not a product presenting risks of explosion. in Presence of Various Substances			
Products of Combustion	Carbon oxides (CO, CO2), smoke and irritating vapours as products of incomplete combustion.			
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO2, water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.			

Material Release or Spill Small spill or leak: Dilute with water and mop up or absorb with an inert DRY material and place in an appropriate wast disposal container. Large spill or leak: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Dispose of it	Section VI. Accidental Release Measures		
accordance with regional regulations.	Material Release or Spill	Small spill or leak: Dilute with water and mop up or absorb with an inert DRY material and place in an appropriate waste disposal container. Large spill or leak: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Dispose of in accordance with regional regulations.	

Section VII. Handling and Storage		
Handling	Avoid contamination with reactive substances. After handling, always wash hands thoroughly with soap and water.	
Storage	Keep container dry. Keep container tightly closed. Keep in a cool, well-ventilated place.	

Section VIII. Expos	sure Controls/Personal Protection
Engineering Controls	For normal application, special ventilation is not necessary. If user's operations generate vapours or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Make-up air should always be supplied to balance air removed by exhaust ventilation. Ensure that eyewash station and safety shower are close to work-station.
Personal Protection -	The selection of personal protective equipment varies, depending upon conditions of use.
Eyes	Eye protection (i.e., safety glasses, safety goggles and/or face shield) should be determined based on conditions of use. If product is used in an application where splashing may occur, the use of safety goggles and/or a face shield should be considered.
Body	Wear appropriate clothing to prevent skin contact. As a minimum long sleeves and trousers should be worn.
Respiratory	Where concentrations in air may exceed the occupational exposure limits given in Section 2 (and those applicable to your area) and where engineering, work practices or other means of exposure reduction are not adequate, NIOSH approved respirators may be necessary to prevent overexposure by inhalation.
Hands	Wear appropriate chemically protective gloves. When handling hot product ensure gloves are heat resistant and insulated.
Feet	Wear appropriate footwear to prevent product from coming in contact with feet and skin.

Section IX. Physical and Chemical Properties			
Physical State and Appearance	Clear viscous liquid.	Viscosity	Not available
Colour	Green.	Pour Point	Not available
Odour	Odourless.	Softening Point	Not applicable.
Odour Threshold	Not available	Dropping Point	Not applicable.
Boiling Point	129 to 197°C (264 to 387°F)	Penetration	Not applicable.
Density	1.115 to 1.145 (Water = 1)	Oil / Water Dist. Coeff.	Not available
Vapour Density	2.1 (Air=1).	Ionicity (in water)	Not available
Vapour Pressure	0.06 mmHg @ 20°C (68°F).	Dispersion Properties	Not available
Volatility	0% (w/w)	Solubility	Soluble in water, methanol and diethyl ether.

Section X. Stability and Reactivity			
Corrosivity	Not available		
Stability	The product is stable.	Hazardous Polymerization	Will not occur under normal working conditions.
Incompatible Substances / Conditions to Avoid	Reactive with oxidizing agents, acids and alkalis.	Decomposition Products	May release COx, smoke and irritating vapours when heated to decomposition.

Section XI. Toxicological Infe	ormation
Routes of Entry	Eye contact and ingestion.
Acute Lethality	LD50: 4700 mg/kg (oral/rat). [Ethylene Glycol] LD50: 9530 mg/kg (dermal/rabbit). [Ethylene Glycol]
Chronic or Other Toxic Effects Dermal Route:	Slightly hazardous in case of skin contact (irritant).
Inhalation Route:	Slightly hazardous in case of inhalation (lung irritant). Can cause nausea, headaches and vomiting.
Oral Route:	Extremely dangerous in case of ingestion.
Eye Irritation/Inflammation:	Slightly hazardous in case of eye contact (irritant).
Immunotoxicity:	Not available
Skin Sensitization:	Not available
Respiratory Tract Sensitization:	Not available
Mutagenic:	Not available
Continued on Next Page	Available in French

ANTIFREEZE	Page Number: 3
Reproductive Toxicity:	Not available
Teratogenicity/Embryotoxicity:	Fetotoxic and teratogenic in mice at levels below maternal toxicity.
Carcinogenicity (ACGIH):	ACGIH A4: not classifiable as a human carcinogen.
Carcinogenicity (IARC):	Not available
Carcinogenicity (NTP):	Not available
Carcinogenicity (IRIS):	Not available
Carcinogenicity (OSHA):	Not available
Other Considerations	The substance may be toxic to kidneys and liver. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section XII. Ecological Information				
Environmental Fate	Not available	Persistance/ Bioaccumulation Potential	Not available	
BOD5 and COD	Not available	Products of Biodegradation	Not available	
Additional Remarks	No additional remark.			

Section XIII. Disp	osal Considerations
Waste Disposal	Preferred waste management priorities are: (1) recycle or reprocess; (2) incineration with energy recovery; (3) disposal at licensed waste disposal facility. Ensure that disposal or reprocessing is in compliance with government requirements and local disposal regulations. Consult your local or regional authorities.

Section XIV. Trans	sport Information		
DOT Classification	Not a DOT controlled material (United States).	Special Provisions for Transport	Not applicable.

Section XV. Regulatory Information					
Other Regulations	This product is acceptable for use under the provisions of WHMIS-CPR. All components of this formulation are listed on the CEPA-DSL (Domestic Substances List).				
	ventory.				
	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and MSDS contains all of the information required by the CPR.				
	Please contact Product Safety for more information.				
DSD/DPD (EEC)	Not evaluated.	WHMIS (Canada)	D-2A		
ADR (Europe) (Pictograms)	NOT EVALUATED FOR EUROPEAN TRANSPORT NON ÉVALUÉ POUR LE	TDG (Canada) (Pictograms)	\bigotimes		

Section XVI. Other Information						
References Available upon request. * Marque de commerce de Petro-Canada - Traden	nark					
Glossary						
ACGIH - American Conference of Governmental Industrial Hygienists	IRIS - Integrated Risk Information System					
ADR - Agreement on Dangerous goods by Road (Europe)	LD50/LC50 - Lethal Dose/Concentration kill 50%					
ASTM - American Society for Testing and Materials (LDLo/LCLo - Lowest Published Lethal Dose/Concentration					
BOD5 - Biological Oxygen Demand in 5 days	NAERG'96 - North American Emergency Response Guide Book (1996)					
CAN/CGA B149.2 Propane Installation Code	NFPA - National Fire Prevention Association					
CAS - Chemical Abstract Services	NIOSH - National Institute for Occupational Safety & Health					
CEPA - Canadian Environmental Protection Act	NPRI - National Pollutant Release Inventory					
CERCLA - Comprehensive Environmental Response, Compensation and	NSNR - New Substances Notification Regulations (Canada)					
Liability Act	NTP - National Toxicology Program					
CFR - Code of Federal Regulations	OSHA - Occupational Safety & Health Administration					
CHIP - Chemicals Hazard Information and Packaging Approved Supply List	PEL - Permissible Exposure Limit					
COD5 - Chemical Oxygen Demand in 5 days	RCRA - Resource Conservation and Recovery Act					
CPR - Controlled Products Regulations	SARA - Superfund Amendments and Reorganization Act					
DOT - Department of Transport	SD - Single Dose					
DSCL - Dangerous Substances Classification and Labeling (Europe)	STEL - Short Term Exposure Limit (15 minutes)					
DSD/DPD - Dangerous Substances or Dangerous Preparations Directives	TDG - Transportation Dangerous Goods (Canada)					
(Europe)	TDLo/TCLo - Lowest Published Toxic Dose/Concentration					
DSL - Domestic Substance List	TLm - Median Tolerance Limit					
EEC/EU - European Economic Community/European Union	TLV-TWA - Threshold Limit Value-Time Weighted Average					
EINECS - European Inventory of Existing Commercial Chemical Substances	TSCA - Toxic Substances Control Act					
EPCRA - Emergency Planning and Community Right to Know Act	USEPA - United States Environmental Protection Agency					
Continued on Next Page	Available in French					

ANTIFREEZE		Page Number: 4	
FDA - Food and Drug Administration FIFRA - Federal Insecticide, Fungicide and Rodenticide Act HCS - Hazardous Communication System HMIS - Hazardous Material Information System IARC - International Agency for Research on Cancer	USP - United States Pha WHMIS - Workplace Haz	rmacopoeia ardous Material Information System	
For Copy of MSDS	Prepared by Product Safety - TAR on 7/3/2001.		
Western Canada, telephone: 403-296-4158; fax: 403-296-6551 Ontario & Central Canada, telephone: 1-800-668-0220; fax: 1-800-83 Quebec & Eastern Canada, telephone: 514-640-8308; fax: 514-640-8	Data entry by Product Safety - JDW.		
For Product Safety Information: (905) 804-4752			

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.

APPENDIX C: NT-NU Spill Report Form



NT-NU SPILL REPORT

NT-NU 24-HOUR SPILL REPORT LINE TEL: (867) 920-8130 FAX: (867) 873-6924 EMAIL: spills@gov.nt.ca

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

REPORT LINE USE ONLY

А	REPORT DATE: MONTH – DAY – YEAR		REPO					REPORT NUMBER		
						0	RIGINAL SPILL R	EPORT,	-	
В	OCCURRENCE DATE: MONTH – DAY – YEAR						PDATE #			
С	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE	NUMB	ER (IF APPLICAB	LE)			
П	GEOGRAPHIC PLACE	NAME OR DISTAN	ICE AND DIREC		THE		N			
										ADJACENT JURISDICTION
Е	LATITUDE DEGREES MINUTES SECONDS			LONGITUDE DEGREES MINUTES SECONDS						
F	RESPONSIBLE PARTY OR VESSEL NAME RESPONSIBLE			BLE F	E PARTY ADDRESS OR OFFICE LOCATION					
G	ANY CONTRACTOR INVOLVED CONTRACTO		OR A	OR ADDRESS OR OFFICE LOCATION						
	PRODUCT SPILLED			QUANTITY	IN LI	LITRES, KILOGRAMS OR CUBIC METRES U.N. N		U.N. NUME	BER	
Н				OLIANTITY						SED
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	QUANTIT					0.14. 1401012	
Ι	SPILL SOURCE SPILL CAUSE		SE			AREA OF CO	DNTAMINATION IN SQUARE METRES			
J	FACTORS AFFECTING SPILL OR RECOVERY DESCRIBE		DESCRIBE	ANY ASSISTANCE REQUIRED		HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT		S, PROPERTY OR		
	ADDITIONAL INFORMA	TION, COMMENT	S, ACTIONS PR	OPOSED OR	TAK	EN TO CONTAIN,	RECOV	ER OR DISPOSE	OF SPILLE	D PRODUCT AND
	CONTAMINATED MATE	ERIALS								
ĸ										
					_					
L	REPORTED TO SPILL L	INE BY	POSITION		EN	IPLOYER	L	OCATION CALLI	NG FROM	TELEPHONE
Μ	ANY ALTERNATE CON	ТАСТ	POSITION		EN	IPLOYER	A	LTERNATE CON	ТАСТ	ALTERNATE TELEPHONE
REPOR	RT LINE USE ONLY									
NI	RECEIVED AT SPILL LI	INE BY	POSITION		EN	IPLOYER	L	OCATION CALLE	D	REPORT LINE NUMBER
			Station operat	tor				Yellowknife, NT	1	(867) 920-8130
LEAD		сссутсмзз	GNWT	GN	SIC					
	AANDC NEB	OTHER:							FILE 3	TATUS DOPEN DELUSED
AGEN	CY C	ONTACT NAME			СС	ONTACT TIME	F	REMARKS		
LEAD AGENCY										
FIRST SUPPORT AGENCY										
SECO AGEN	ND SUPPORT									
THIRD	SUPPORT AGENCY									

APPENDIX D: Immediately Reportable Spill Quantities

Immediately Reportable Spill Quantities, derived from the *Environmental Protection Act* Spill Contingency Planning And Reporting Regulations

TDG Class	Substance for NWT 24 Hour Spill Line	Immediately Reportable Quantities			
1 2.3 2.4 6.2 7 None	Explosives Compressed gas (toxic) Compressed gas (corrosive) Infectious substances Radioactive Unknown substance	Any amount			
2.1 2.2	Compressed gas (flammable) Compressed gas (non-corrosive, non-flammable)	Any amount of gas from containers with a capacity greater than 100 L			
3.1 3.2 3.3	Flammable liquids	> 100 L			
4.1 4.2 4.3	Flammable solids Spontaneously combustible solids Water reactant	> 25 kg			
5.1 9.1	Oxidizing substances Miscellaneous products or substances excluding PCB mixtures	> 50 L or 50 kg			
5.2 9.2	Organic peroxides Environmentally hazardous	> 1 L or 1 kg			
6.1 8 9.3	Poisonous substances Corrosive substances Dangerous wastes	> 5 L or 5 kg			
9.1	PCB mixtures of 5 or more ppm	> 0.5 L or 0.5 kg			
None	Other contaminants (e.g. crude oil, drilling fluid, produced water, waste or spent chemicals, used or waste oil, vehicle fluids, waste water, etc.)	> 100 L or 100 kg			
None	Sour natural gas (i.e. contains H2S) Sweet natural gas	Uncontrolled release or sustained flow of 10 minutes or more			

In addition, all releases of harmful substances, regardless of quantity, are to be reported to the NWT spill line if the release is near or into a water body, is near or into a designated sensitive environment or sensitive wildlife habitat, poses imminent threat to human health or safety, poses imminent threat to a listed species at risk or its critical habitat, or is uncontrollable.