Trinex Lithium Limited

A subsidiary of

TRINEX MINERALS

Spill Contingency Plan V1.1

Halo-Yuri Project

Prepared for the
McKenzie Valley Land and Water Board
30 January 2025

Document Maintenance and Control

Trinex Lithium Limited is responsible for the distribution, maintenance and updating of this document. This document will be reviewed annually at least, and more frequently to include any changes in the Project, best practices, guidelines, advice from the Inspector, contact information, environmental factors, or following a spill incident. Revised versions will be provided to the Mackenzie Valley Land and Water Board for approval and circulated accordingly.

Revision History

Revision #	Section(s) Revised	Description of Revision	Date
0	N/A	First version for Halo-Yuri Project	1 November 2024
1	Table 1	Gasoline amount updated	30 January 2025

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1. INTRODUCTION

1.1. Background

This Spill Contingency Plan (SCP) has been created for Trinex Lithium Limited's (Trinex) Halo-Yuri Lithium Project (the Project). The Project involves surface and sub-surface exploration for lithium and other minerals within the Project mineral claims.

The purpose of the SCP is to provide a guide to all site personnel in the event of an accidental release of fuel or other hazardous materials to the natural environment. The SCP provides the protocols for personnel to follow in response to a spill.

All people 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.

This SCP has been developed in accordance with the Guidelines for Spill Contingency Planning prepared by Indian and Northern Affairs Canada (INAC 2007) and the Spill Contingency Planning and Reporting Regulations issued under the Environmental Protection Act and will be approved under a land use permit.

1.2. Project Contacts

Primary Contact

David Cornish – Exploration Manager (Trinex Lithium Ltd)

Address: 128 Churchill Ave, Subiaco WA 6008, AUSTRALIA

Email: dcornish@trinexminerals.com.au

Website: www.trinexminerals.com.au

Phone: +61 403 880 873

Secondary Contact

Nate Schmidt – Senior Geologist (Dahrouge Geological Consulting)

Address: 103-10183 112th Street, Edmonton, Alberta, CANADA

Email: Nate.Schmidt@dahrouge.com

Website: www.dahrouge.com

Phone: 780-434-9808

1.3. Roles and Responsibilities

The Exploration and Site Manager is responsible for the implementation of this Plan, approval of any changes, and reporting and provision of the latest version to the MVLWB. All Project staff and contractors are required to be aware of this Plan and contribute to its implementation.

1.4. Legislation and Guidelines

Applicable environmental legislation and guidelines include:

- Guidelines for Spill Contingency Planning (INAC 2007),
- Guideline for Hazardous Waste Management (GNWT-ENR 2017),

- *Fisheries Act* and Regulations,
- *Transportation of Dangerous Goods Act* and Regulations,
- Northwest Territories *Environmental Protection Act* and regulations, including the Spill Contingency Planning and Reporting Regulations,
- Northwest Territories *Waters Act* and Regulations.

2. PROJECT DETAILS

Trinex Lithium Limited are a wholly owned subsidiary of Trinex Minerals Limited, an Australian-based resource company with projects across Western Australia, Northern Territory, South Australia, the Northwest Territories and Saskatchewan, Canada.

The Northwest Territories, particularly the Yellowknife region, has a storied history of lithium exploration dating back to the 1950s with limited recent interest in the area. It wasn't until late 2022 when Li-FT Power secured its potentially world-class Yellowknife Lithium Project that the Northwest Territories regained serious attention.

Yellowknife is a well-established mining city with experienced mining services and workforce. Trinex is looking forward to building relationships with the local stakeholders and becoming an important part of this emerging lithium district.

The Halo-Yuri Lithium Project covers approximately 450 square kilometres and comprises 37 contiguous claims. It is located approximately 250 kms northeast of Yellowknife on the Gahcho Kue annual winter road which provides good access for drilling and is within a few hundred metres of the 'OIG' spodumene occurrence. Historically, exploration on the project has focused on diamonds with little or no previous work on pegmatites albeit there is documented spodumene bearing pegmatites with numerous unexplored targets.

As the Project is located on the barren-lands, vegetation clearing will be limited. Water for drilling will be drawn from local water sources. Water use will be below 99 cubic meters per day, so a water licence is not required. Water will be sourced from Aylmer Lake and other lakes within the Mineral Claims.

The Project area falls within the Taiga shield high subarctic ecoregion which is characterized by bedrock with shrub and lichen tundra.

Exploration across the Project will include surface sampling, geological mapping and drill programs. The drill program will start upon approval of a Type A Land Use Permit. Clearing of vegetation is unlikely but may be required on drill pads and on skid trails during summer exploration. Water for drilling will be drawn from several localities within the Lake systems across the project area. Water use will be below 99 m^3 per day, so a water license is not sought. A camp will be established to accommode up to 20 people at a site close to the Winter Road, amenable to both summer and winter use and aircraft access.

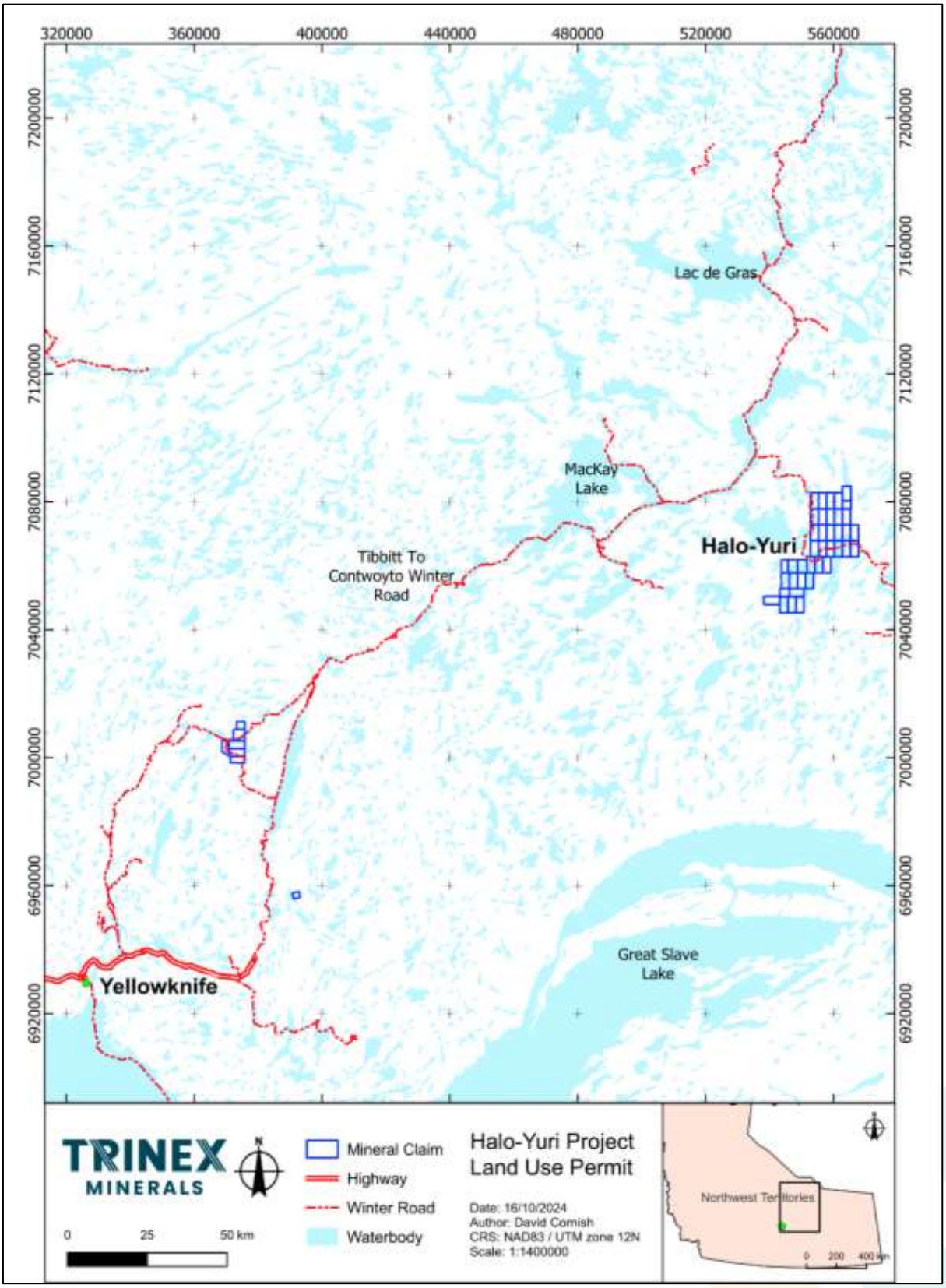

Figure 1: Halo-Yuri Project location map.

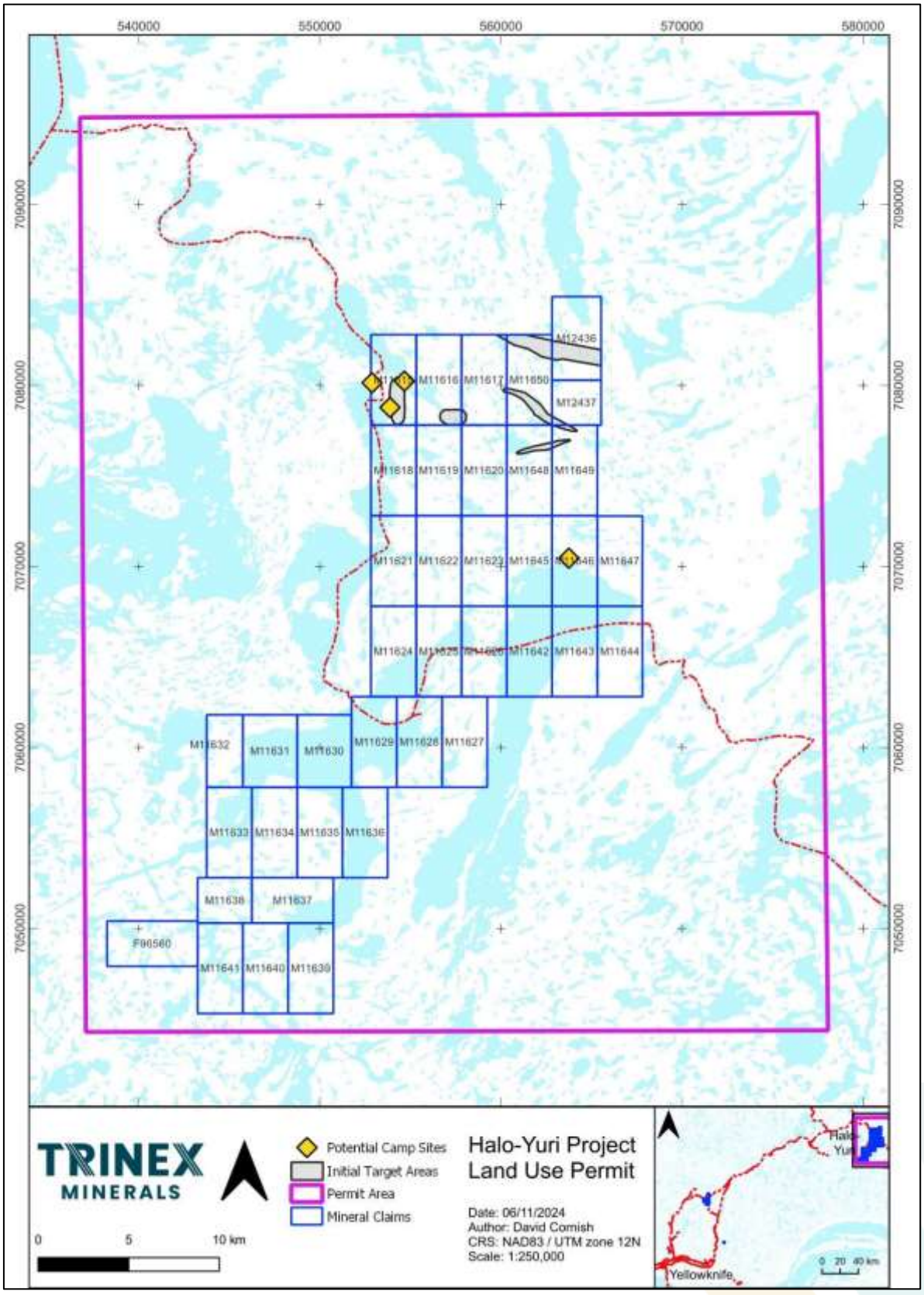

Figure 2: Halo-Yuri project area showing Land Use Permit application boundary, initial drilling target areas and potential camp site locations.

2.1. Potential Contaminants

Estimated quantities and containment of the spillable consumable materials to be used during the Project, including fuels, compressed gases, fluids, and drilling additives (Table 1). Amounts indicated are the *maximum* that *may* be required and, on most occasions, there will not be these amounts on site.

Table 1: Type, amount and location of potential contaminants.

Material	Number	Capacity of Containers	Container Type	Storage Location
Diesel	200	205 litres	Barrel (or tidy tanks or approved envirotanks if required)	Drill site and camp facility fuel cache within impermeable berms
Gasoline	15	205 litres	Barrel (or tidy tanks or approved envirotanks if required)	Drill site and camp facility fuel cache within impermeable berms
Jet-A	200	205 litres	Barrel (or tidy tanks or approved envirotanks if required)	Camp facility fuel cache within impermeable berms
Propane	20	45 kg (100lb)	Cylinder/tank	Drill sites
Coolant	10	Up to 205 litres	Vendors container	Camp facility fuel cache or drill site within impermeable berms
Antifreeze	10	Up to 205 litres	Vendor's container	Camp facility fuel cache or drill site within impermeable berms
Oil, hydraulic fluid, lubricants	Up to 100 of each	Up to 30 litres	Tubes, cans, pails	Camp facility fuel cache or drill site within impermeable berms
Drilling fluid additives (Clay Cap, GD Lube, CD Mud, Grizzley Grease, Linseed Soap, Poly Core)	Up to 100 of each	Up to 30 litres	Tubes, cans, pails	Camp facility fuel cache or drill site within impermeable berms

The Safety Data Sheets for each hazardous material are included in Appendix 1. Trinex will maintain an up-to-date hard copy binder for all controlled products that will be used on site. This will be available on-site for reference as required.

2.2. Potential Impacts

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
- Container leaks
- Overflow of tanks
- Vandalism
- No or improper training.

Potential environmental impacts of spills include the contamination of soils and watercourses, or release of harmful gas. This may in turn cause health impacts to vegetation, wildlife, fish and aquatic life, and humans.

3. SPILL PREVENTION

3.1. General Spill Prevention

The most likely scenarios under which a spill could occur are leakage or line failure from equipment, spilling during fuel transfer, or vehicular accident. Spill prevention measures include:

- Follow speed limits on the road.
- Vehicles travelling on the road will be properly loaded with loads covered where necessary.
- All workers will receive Spill Contingency Plan and Workplace Hazardous Materials Information Systems training prior to beginning work. A hard copy of the Spill Contingency Plan will be posted at the drill site for reference.
- Project startup and daily tailgate safety meetings will be required.
- All personnel shall be instructed to maintain and inspect their vehicles and equipment daily prior to the start of an activity. Additional visual checks are to be performed over the duration of the work.
- Vehicles and equipment working near water shall be cleaned and serviced as necessary to prevent deposition of soils, oil, grease, coolant, fuel and other contaminants.
- Maintenance activities (oil changes, repair of hydraulic hoses) shall be carried out in designated areas a minimum of 100m away from lakes and watercourses. Spill trays will be used during field maintenance and repairs.
- Fuel caches shall include impermeable berms and will be located on flat stable terrain or in natural depressions more than 100m away from slopes to water bodies, the high water mark and any lake or watercourse. Fuel caches will be clearly marked, and drums will be stored on their side with the closed bung and vent holes at 3 and 9 o'clock.
- All fuels and hazardous materials will be stored in the fuel caches which will be protected from vehicle impacts by barriers if required.

- All fuel storage and transfer will take place at a designated area, a minimum of 100m from any lakes and watercourses, and will be conducted by trained personnel.
- Sufficient spill kits and fire extinguishers will be kept near fuel storage.
- An emergency spill response kit will be kept in vehicles and wherever fuel is stored.
- Drip trays will be placed 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.
- During winter conditions operators of equipment are to be reminded to complete additional visual checks on hydraulic systems throughout the work. Colder temperatures increase stress on hoses and are more prone to failure. Hydraulic systems should allow a longer warm-up period before use.
- Drips will be fixed immediately.
- All spills will be documented and managed as described below.
- All containers will have current Workplace Hazardous Materials Information System (WHMIS) labels and Safety Data Sheets (SDS) available.

3.2. Fueling Procedure

In addition to the spill prevention measures described above, the following fueling procedures will be used:

- Fueling will only be completed by staff with training to do so.
- Transfer nozzles will be of a design that minimizes drips and leaks.
- Spill mats and/or drip trays will be placed under all mobile fueling containers.
- At the beginning of each shift, inspect all fueling equipment to confirm it is functional, free of leaks, and that spill response equipment is available.
- Fueling will always be attended. Staff will not leave the fueling operation until it is complete, and all fuel containers are closed and stored.
- Fueling is only permitted using tanks, hoses, pumps that are approved for fuel transfer.
- Trigger locks are not permitted.
- When unreeling or reeling fuel hose, ensure the nozzle is kept in the upright position.
- Nozzles must be placed in a holster when not in use.
- A spill containment tray must be placed under the fueling point. If not possible, use absorbent pads to prevent any leaks from reaching the ground.
- Do not fill to capacity. Allow room for expansion.
- Smoking, open flames, welding or non-fixed sources of ignition are not permitted within 20 metres of fueling or the fuel station.

4. 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. Idenitfy the product,
3. Notify Site Manager/Exploration Manager/Lead Geologist.

4.1. Minor Spills

For spills below the Immediately Reportable Spill Quantities (Appendix 2) use the following procedure:

1. Stop the spill if safely possible.
2. Sources of ignition should be removed.
3. Ensure the spill does not enter a waterbody.
4. Complete the NT-NU Spill Report form (Appendix 3) and email it to spills@gov.nt.ca
5. Report to the Inspector on an agreed schedule (i.e., during inspections)

4.2. Major Spills

For spills that meet or exceed the Immediately Reportable Spill Quantities (Appendix 2) use the following procedure:

1. Stop the spill if safely possible.
2. Sources of ignition should be removed.
3. Ensure the spill does not enter a waterbody.
4. Notify the NT-NU 24-hour Spill Report Line at 867-920-8130
5. Complete the NT-NU Spill Report form (Appendix 3) and email it to spills@gov.nt.ca
6. Report to the Inspector as soon as possible during work hours

4.3. Procedure for Spills on Land

If a spill occurs on land, the following steps should be taken.

- 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.
- 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 the spill is too large to be controlled with the spill materials at hand, contact the Project Manager and report the spill immediately and request assistance. Use materials on hand to attempt to control the spill.
- 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.
- If possible, remove any contained liquid by pumping it into secure drums.

4.4. Procedure for Spills on Water

If a spill occurs on water, the following steps should be taken. While Project drilling is not authorized within 100m of the Ordinary High-Water Mark of any watercourse, response for spills in water are included here as a contingency.

- 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.
- 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.
- If the spill is too large to be controlled with the spill materials at hand, contact the Project Manager and report the spill immediately and request assistance. Use materials on hand to attempt to control the spill.
- 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.
- If possible, clean up the remaining spill contaminant within the boomed area. Store contaminated materials in a secure container for proper disposal.

4.5. Procedure for Spills on Snow or Ice

If a spill occurs on snow or ice, the following steps should be taken.

- 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.
- 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 the spill is too large to be controlled with the spill materials at hand, contact the Project Manager and report the spill immediately and request assistance. Use materials on hand to attempt to control the spill.
- If possible, with the spill response materials at hand, clean up the remaining spilled contaminant and store contaminated waste materials in a secure container for disposal. Affected snow will be stored in drums for proper disposal.

4.6. Restoration

Following a spill, communicate with GNWT Lands Inspector on any required site restoration activities. Site specific studies or monitoring to assess the extent of soil and groundwater impact may be required to develop a remediation program appropriate to the nature of the impact. Site investigation and remediation work will be completed in consultation with any assigned agency representatives, as required. Status updates on restoration efforts will be provided as required by the Inspector.

5. RESOURCE INVENTORY

Spill Kits will be located within the Camp facility and at drillsites.

Maximum spill size is limited to the size of individual containers. Fuel potential spill volumes are limited to the fuel tank size in both the drill rig and single storage drums, so a maximum potential spill/worst case scenario is 450 litres, from tidy tank fuel storage.

5.1. On-Site Resources

At least one spill kit will be clearly marked and present at each fuel storage and fuel transfer area. All vehicles and drills will be equipped with a dedicated spill kit.

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; 5 in. x 10 ft.)
- 10 kg bag of sorbent particulate
- 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).

5.2. Off-Site Resources

Primary spill response will be managed on-site. In the case that the spill cannot be managed with the on-site resources, the following off-site agencies will be contacted for further assistance.

Agency	Contact Details
GNWT Department of Lands, North Slave Region	867-767-9188

NT-NU 24-hour Spill Report Line	867-920-8130
Environmental Protection Division, Department of Environment and Natural Resources, GNWT	867-873-7654
Environment Canada National Environmental Emergencies Centre	866-283-2333
CIRNAC Resource and Lands Office	867-669-2442
Environment Canada (Emergency) - Yellowknife	867-669-4725
Fisheries and Oceans Canada - Yellowknife	867-669-4900
RCMP - Yellowknife	867-669-1111
KBL Environmental 24-Hour Response	855-354-5263
Discovery Mining Services	867-920-4600

6. TRAINING

Trinex is responsible for providing a copy of this Spill Contingency Plan and any required guidance or direction to all Project employees and contractors. All staff will undergo an orientation meeting prior to starting work. This orientation will include:

- Where to find copies of this Spill Contingency Plan.
- Individuals' roles and responsibilities regarding spill prevention, detection, response, and clean-up.
- Fueling procedures.
- Content of spill kits and use of the equipment within the spill kit.
- Steps to identify, assess, and respond to spill situations.
- Initial actions and spill reporting procedures.
- Communication procedures to report spills.
- Disposal of contaminated soils and absorbents.

In addition, Trinex will host daily meetings, and weekly safety and operational meetings, where spill management including spill reporting and responses will be reviewed.

Transportation of Dangerous Goods (TDG) Regulation training will be provided to any employees responsible for the coordination of hazardous waste (i.e., dangerous goods) shipments off-site. Only TDG trained employees or certified contractors will prepare, review and sign waste manifests / shipping documents, in accordance with regulatory requirements.

Key site staff have basic first aid training as well as Workplace Hazardous Materials Information System training (WHMIS). Supervisors are trained in the Transportation of Dangerous Goods Regulation requirements.

7. REFERENCES

GNWT-ENR (Government of the Northwest Territories Department of Environment and Natural Resources. 2017. Guideline for Hazardous Waste Management. http://www.enr.gov.nt.ca/sites/enr/files/resources/128-hazardous_waste- interactive_web.pdf

INAC (Indian and Northern Affairs Canada). 2007. Guidelines for Spill Contingency Planning. https://mvlwb.com/sites/default/files/guidelines_for_spill_contingency_plan ning_2007.pdf

APPENDIX 1 – SAFETY DATA SHEETS

Anti-Freeze Coolant – Recochem
Clay Cap – Canadian Drilling Fluids
Diesel Fuel – Petro Canada
Gasoline (Unleaded) – Petro Canada
GD Lube – Canadian Drilling Fluids
GD Mud – Canadian Drilling Fluids
Grizzly Grease – Canadian Drilling Fluids
Jet-A – Petro Canada
Linseed Soap – Canadian Drilling Fluids
Poly Core – Canadian Drilling Fluids
Propane – Petro Canada

Antifreeze/Coolant

SECTION 1. IDENTIFICATION

Product Identifier	Antifreeze/Coolant
Other Means of Identification	16-924R, 26-929R, 26-929R-1000, 16-924R, 26-929R, 26-929R-1000, BULK-16930FCR
Recommended Use	Please refer to Product label.
Restrictions on Use	None known.
Manufacturer/Supplier Identifier	Recochem Inc., 850 Montee de Liesse, Montreal, QC, H4T 1P4, Compliance and Regulatory Department, 905-878-5544, www.recochem.com
Emergency Phone No.	CANUTEC, 613-996-6666, 24 Hours
SDS No.	1991

SECTION 2. HAZARD IDENTIFICATION

Classification

Acute toxicity (Oral) - Category 4; Reproductive toxicity - Category 1A; Specific target organ toxicity (repeated exposure) - Category 2

Label Elements

Signal Word:
Danger

Hazard Statement(s):

H302 Harmful if swallowed.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs (kidneys) through prolonged or repeated exposure if swallowed.

Precautionary Statement(s):

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe fume, mist, vapours, spray.
P264 Wash hands and skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves, eye protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTRE or doctor.

P330 Rinse mouth.
P308 + P313 IF exposed or concerned: Get medical advice or attention.

Storage:
Store in a well ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Disposal:
Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Other Hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Ethylene glycol	107-21-1	80-100		
4-tert-Butylbenzoic acid	98-73-7	1-5		

Notes

Use of Generic SDS:
If the concentration or actual concentration range of an ingredient of a particular hazardous product in the series is different from the concentration or actual concentration range disclosed for the rest of the series, either the concentration or the actual concentration range must be indicated beside that ingredient under item 3 (Composition/Information on ingredients) of the SDS. Furthermore, if any other specific information element(s) (such as flash point, numerical measure of toxicity, etc.) for a particular hazardous product in the series differs from that of the other products in the series (without affecting the classification), the information element relevant to that hazardous product must be disclosed on the SDS with an indication to which hazardous product each relates.

Source: Health Canada - Technical Guidance on the Requirements of the Hazardous Products Act and the Hazardous Products Regulations WHMIS 2015 Supplier Requirements - pg 117

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Call a Poison Centre or doctor if you feel unwell.

Skin Contact

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes. Call a Poison Centre or doctor if you feel unwell. Clean clothing, shoes and leather goods.

Eye Contact

If eye irritation persists, get medical advice or attention. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open.

Ingestion

Rinse mouth with water. Call a Poison Centre or doctor if you feel unwell.

Most Important Symptoms and Effects, Acute and Delayed

If swallowed: There are 3 stages of effects, which can overlap. Early symptoms can include upset stomach, slurred speech, clumsiness, drowsiness, and convulsions. Second stage symptoms can include rapid heartbeat and breathing, bluish lips and skin, fluid in the lungs and heart failure. In the last stage, there can be kidney stones and kidney damage with lower back pain, and increased then decreased urine production. There may be delayed nervous system effects such as paralysis of the face, clumsiness, impaired hearing and blurred vision. Death can occur at any stage.

Immediate Medical Attention and Special Treatment

Target Organs

Digestive system, nervous system, heart, digestive system, kidneys, skin.

Special Instructions

The signs and symptoms in ethylene glycol poisoning are those of metabolic acidosis, central nervous system depression and kidney injury. Clinical chemistry may reveal anion-gap metabolic acidosis and uremia. Treatment with ethanol to inhibit the metabolism of glycol to oxalate.Early administration of ethanol may counter the toxic effects of ethylene glycol (cardiopulmonary effects attributed to metabolic acidosis and renal damage). Hemodialysis or peritoneal dialysis have been of benefit. Pre-existing respiratory and skin disorders may be aggravated by over-exposure to this product. Treat symptomatically and supportively.

Medical Conditions Aggravated by Exposure

Dermatitis.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder or appropriate foam.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Can ignite if strongly heated.
In a fire, the following hazardous materials may be generated: irritating chemicals.

Special Protective Equipment and Precautions for Fire-fighters

Review Section 6 (Accidental Release Measures) for important information on responding to leaks/spills.
See Skin Protection in Section 8 (Exposure Controls/Personal Protection) for advice on suitable chemical protective materials.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

When handling concentrated product: avoid breathing in this product. Prevent skin contact. Avoid repeated or prolonged skin contact. Do not swallow. Avoid generating vapours or mists. Avoid heating that will increase the amount of vapours. Avoid repeated or prolonged skin contact with product or with contaminated equipment/surfaces. For large-scale use: do NOT eat, drink or store food in work areas. Remove contaminated clothing and protective equipment before entering eating areas or leaving work area. Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area.

Conditions for Safe Storage

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	**TWA**	**STEL**	**TWA**	**Ceiling**	**8-hr TWA**	**TWA**
Ethylene glycol	10 mg/m3	100 mg/m3	Not established	50 ppm		
4-tert-Butylbenzoic acid	Not established	Not established	Not established	Not established		

Appropriate Engineering Controls

The hazard potential of this product is relatively low. General ventilation is usually adequate. Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air.

Individual Protection Measures

Eye/Face Protection

Not required but it is good practice to wear safety glasses or chemical safety goggles.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.
Nitrile rubber.

Respiratory Protection

Not normally required if product is used as directed. For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an appropriate cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Available in these colours: Clear, Yellow, Gold, Red, Blue, Green, Amber, Pink, Orange, Purple, White, Brown, Grey, Teal.
Odour	Odourless
Odour Threshold	Not available
pH	7.8 - 9.5
Melting Point/Freezing Point	-13 ºC (9 ºF) (melting); -13 ºC (9 ºF) (freezing)
Initial Boiling Point/Range	197 ºC (387 ºF)
Flash Point	111 ºC (232 ºF)
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	Not available
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	1.1150 - 1.1135 at 20 ºC
Solubility	Not available in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available

Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available (kinematic); Not available (dynamic)

Other Information

Physical State	Liquid
Molecular Weight	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

None known.

Incompatible Materials

Slightly reactive or incompatible with the following materials: oxidizing agents (e.g. peroxides), strong acids (e.g. hydrochloric acid), strong bases (e.g. sodium hydroxide).
Not corrosive to metals.

Hazardous Decomposition Products

None known.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Skin contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Ethylene glycol	2725 mg/m3 (rat) (4-hour exposure)	1560 mg/kg Human - Male	9530 mg/kg (rabbit)
4-tert-Butylbenzoic acid	> 1802 mg/m3 (rat) (4-hour exposure)	568 mg/kg (mouse)	300 mg/kg (mouse)

LC50: No information was located.

LD50 (oral): No information was located.

LD50 (dermal): No information was located.

Skin Corrosion/Irritation

Human experience and animal tests show mild irritation.

Serious Eye Damage/Irritation

May cause serious eye irritation based on information for closely related materials. Symptoms include sore, red eyes, and tearing.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

At high concentrations as a mist nose and throat irritation. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

Skin Absorption

At high concentrations may cause Symptoms may include redness, rash, swelling and itching.

Ingestion

Toxic, can cause death based on information for closely related materials. depression of the central nervous system, and effects on the heart and kidneys. In some cases, there may be delayed effects on the nervous system. There are 3 stages of effects, which can overlap. Early symptoms can include upset stomach, slurred speech, clumsiness, drowsiness, and convulsions. Second stage symptoms can include rapid heartbeat and breathing, bluish lips and skin, fluid in the lungs and heart failure. In the last stage, there can be kidney stones and kidney damage with lower back pain, and increased then decreased urine production. There may be delayed nervous system effects such as paralysis of the face, clumsiness, impaired hearing and blurred vision. Death can occur at any stage.

Aspiration Hazard

Not known to be an aspiration hazard.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

May cause dermatitis. Symptoms may include dry, red, cracked skin (dermatitis).
May cause Following skin contact and/or if swallowed: harmful effects on the kidneys.

Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer. Not known to be a skin sensitizer.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Ethylene glycol	Not Listed	A4	Not Listed	Not Listed
4-tert-Butylbenzoic acid	Not Listed	Not designated	Not Listed	Not Listed

Reproductive Toxicity

Development of Offspring

Studies in people and animals show effects on the unborn child.

Sexual Function and Fertility

Studies in people and animals show effects on sexual function and/or fertility.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

Not known to be a mutagen.

Interactive Effects

No information was located.

Other Information

TOXIC SUBSTANCE: KEEP AWAY FROM ANIMALS AND SMALL CHILDREN.

SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

Ecotoxicity

Chronic Aquatic Toxicity

Chemical Name	NOEC Fish	EC50 Fish	NOEC Crustacea	EC50 Crustacea
Ethylene glycol	39140 mg/L (Oncorhynchus mykiss (rainbow trout))		24000 mg/L (Daphnia magna (water flea))	
4-tert-Butylbenzoic acid	Not available		Not available	

Persistence and Degradability

No information was located.

Bioaccumulative Potential

This product and its degradation products are not expected to bioaccumulate.

Mobility in Soil

No information was located.

Other Adverse Effects

There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14. TRANSPORT INFORMATION

Not regulated under Canadian TDG regulations.

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID (Ethylene glycol)	9	III

Environmental Hazards Not applicable (Ethylene glycol)

Special Precautions Please note: In single containers of 5000 lbs capacity or less this product is exempt from DOT regulations (non regulated). Does not require label or placards. Regulated Quantity (RQ)= 5000 lbs (2268 kg) (as ethylene glycol) For bulk shipments equal to or greater than Regulated Quantity (RQ), please adhere to classification as outlined in DOT Classification section.

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Proof of Dangerous Goods Classification

Date of Classification January 11, 2017

Technical Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID

Classification 9 PG III

Classification Method As per regulation for ethylene glycol.

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

Additional USA Regulatory Lists

California Proposition 65: WARNING: Birth Defects and other Reproductive Harm - www.P65Warnings.ca.gov/product.

Custom Regulatory 1

Consumer Product Safety Improvement Act of 2008 General Conformity Certification
The Supplier identified in Section 1 of this MSDS has evaluated this product and certifies it to be labeled and packaged in compliance with the applicable provisions of the Federal Hazardous Substance Act as stated in 16 CFR 1500 and enforced by the Consumer Product Safety Commission, and where applicable the products that require Child Resistant Closures are packaged in accordance with the Poison Prevention Packaging Act as stated in 16 CFR 1700 and enforced by the Consumer Product Safety Commission. All closures have been tested in accordance with the latest protocols. No other testing is required to certify compliance with the above. The date of manufacture is stamped on the product container.

SECTION 16. OTHER INFORMATION

SDS Prepared By	Compliance and Regulatory Department
Phone No.	905-878-5544
Date of Preparation	August 21, 2020
Date of Last Revision	November 16, 2020
Revision Indicators	The following SDS content was changed on November 16, 2020: SECTION 1. IDENTIFICATION; Other Means of Identification.
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).
Additional Information	We are committed to uphold the Industry Consumer Ingredient Communication Voluntary Initiative. Please send us your request by visiting our website at www.recochem.com. Ingredients present (intentionally added ingredients) at a concentration of greater than one percent (1%) shall be listed in descending order of predominance. Ingredients present at a concentration of not more than one percent shall be listed but may be disclosed without respect to order of predominance.
Disclaimer	Notice to reader: To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Clay Cap

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)
Issue date: 11/26/2021 Revision date: 11/26/2021 Version: 1.0

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Product name : Clay Cap

1.2. Recommended use and restrictions on use

Recommended use : Drilling fluid additive

1.3. Supplier

Supplier
Canadian Drilling Fluids Ltd
31 Prestwick Place SE
T2Z 4P4 Calgary, AB - Canada
T +1 306 717 3370

1.4. Emergency telephone number

Emergency number : +1 306 717 3370

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Not classified.

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

No labelling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of WHMIS 2015

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : If skin irritation occurs: Wash skin with plenty of water. Obtain medical attention if irritation persists.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.

Symptoms/effects after skin contact : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : This product contains potassium acetate. Though ingestion of large amounts of potassium salts usually results in vomiting, excessive potassium absorption can cause hyperkalemia.Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : carbon dioxide (CO2), dry chemical powder, water spray. Use extinguishing media appropriate for surrounding fire.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media : None known.

5.3. Specific hazards arising from the hazardous product

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.4. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and materials for containment and cleaning up

For containment : Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Provide ventilation.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke.

Hygiene measures : Wash contaminated clothing before reuse. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool and well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Wear suitable gloves

Eye protection:
Safety glasses or goggles are recommended when using product.

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Other information:
Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	No data available
Colour	:	No data available
Odour	:	No data available
Odour threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Not flammable
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Partition coefficient n-octanol/water	:	No data available
Viscosity, kinematic	:	No data available
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

Reactivity	:	No dangerous reactions known under normal conditions of use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reactions known under normal conditions of use.
Conditions to avoid	:	Heat. Incompatible materials. reactive metals (Al, K, Zn ...).
Incompatible materials	:	Strong oxidizers. Strong acids.
Hazardous decomposition products	:	May include, and are not limited to: oxides of carbon.
Hardening time:	:	No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified.
Acute toxicity (dermal)	:	Not classified.
Acute toxicity (inhalation)	:	Not classified.
Skin corrosion/irritation	:	Not classified.
Serious eye damage/irritation	:	Not classified.
Respiratory or skin sensitization	:	Not classified.
Germ cell mutagenicity	:	Not classified.
Carcinogenicity	:	Not classified.
Reproductive toxicity	:	Not classified.
STOT-single exposure	:	Not classified.
STOT-repeated exposure	:	Not classified.
Aspiration hazard	:	Not classified.

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.
Symptoms/effects after skin contact : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.
Hazardous to the aquatic environment, short-term (acute) : Not classified.
Hazardous to the aquatic environment, long-term (chronic) : Not classified.

12.2. Persistence and degradability

Clay Cap	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Clay Cap	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone : Not classified.
Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Recycle empty containers where allowed.

SECTION 14: Transport information

In accordance with TDG

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (TDG) : Not applicable

14.3. Transport hazard class(es)

TDG
Transport hazard class(es) (TDG) : Not applicable

14.4. Packing group

Packing group (TDG) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

TDG
No data available

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

Not applicable

SECTION 15: Regulatory information

15.1. National regulations

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories.

15.2. International regulations

No additional information available

SECTION 16: Other information

Issue date : 11/26/2021
Revision date : 11/26/2021

Other information : None.
Prepared by : Nexreg Compliance Inc.
www.Nexreg.com

Safety Data Sheet (SDS), Canada - Nexreg 2021

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

SAFETY DATA SHEET

DIESEL FUEL

SDS Number: 000003000395

Version: 6.4 Revision Date: 2023/01/03 Print Date: 2023/01/04

SECTION 1. IDENTIFICATION

Product name	:	DIESEL FUEL
Product code	:	10784
Other means of identification	:	Seasonal Diesel, #2 Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, OSX, D50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulp

Manufacturer or supplier's details

Company name of supplier Address	:	Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary, Alberta T2P 3E3 Canada, Telephone: 1-866-786-2671, +1 403-296-3000
Emergency telephone	:	CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887; Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

Recommended use	:	Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining diesels, marine diesels, MDO and naval distillates may have a higher flash point requirement.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Flammable liquids	:	Category 3
Acute toxicity (Inhalation)	:	Category 4
Skin irritation	:	Category 2
Carcinogenicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure	:	Category 2 (Liver, thymus, Bone)
Aspiration hazard	:	Category 1

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements :

H226 Flammable liquid and vapor.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H332 Harmful if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H373 May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
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 dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Kerosine (petroleum), hydrodesulfurized; Kerosine ?unspecified	Kerosine (petroleum), hydrodesulfurized; Kerosine ?unspecified	64742-81-0	48 - 100
Kerosine (petroleum); Straight run kerosine	Kerosine (petroleum); Straight run kerosine	8008-20-6	
Fuels, diesel; Gasoil ?unspecified	Fuels, diesel; Gasoil ?unspecified	68334-30-5	
Alkanes, C10-20 Branched and Linear	Alkanes, C10-20-branched and linear	928771-01-1	0 - 50
Fatty acids, C16-18 and C18-unsatd., Me esters	Fatty acids, C16-18 and C18-unsatd., Me esters	67762-38-3	0 - 20

All above concentrations are in percent by weight.

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.

		Seek medical advice.
In case of skin contact	:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Seek medical advice.
In case of eye contact	:	Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	:	Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice.
Most important symptoms and effects, both acute and delayed	:	Harmful if inhaled. Respiratory, skin and eye irritation; nausea; cancer.
Indication of immediate medical attention and special treatment needed, if necessary	:	Treat symptomatically. For specialist advice physicians should contact the Poisons Information Service.

SECTION 5. FIRE-FIGHTING MEASURES

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

for fire-fighters	essary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions. Mark the contaminated area with signs and prevent access to unauthorized personnel. Only qualified personnel equipped with suitable protective equipment may intervene.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.
Contains no substances with occupational exposure limit values.
Contains no substances with occupational exposure limit values.
Contains no substances with occupational exposure limit values.
Contains no substances with occupational exposure limit values.
Contains no substances with occupational exposure limit values.

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection : Concentration in air determines protection needed.
Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection
Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Wear face-shield and protective suit for abnormal processing

problems.

Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Bright oily liquid.
Color	:	Clear to yellow (This product may be dyed red for taxation purposes)
Odor	:	Mild petroleum oil like.
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	150 - 371 °C
Initial boiling point and boiling range		No data available
Flash point	:	> 40 °C Method: closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Self-ignition	:	204 °C
Upper explosion limit / Upper flammability limit	:	6 %(V)

Lower explosion limit / Lower flammability limit	:	0,7 %(V)
Vapor pressure	:	7,5 mmHg (20 °C)
Relative vapor density	:	4,5
Relative density	:	0,8 - 0,88
Density	:	No data available
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	1,3 - 4,1 cSt (40 °C)

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable at normal ambient temperature and pressure.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents and acids.
Hazardous decomposition products	:	May release COx, NOx, SOx, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion

Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity	:	Remarks: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Acute toxicity estimate: 1,5 mg/L Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method Remarks: Harmful if inhaled.
Acute dermal toxicity	:	

Components:

Kerosine (petroleum), hydrodesulfurized; Kerosine ?unspecified:

Acute oral toxicity	:	LD50 (Rat): > 5.000 mg/kg
Acute dermal toxicity	:	LD50 (Rabbit): > 2.000 mg/kg

Kerosine (petroleum); Straight run kerosine:

Acute oral toxicity	:	LD50 (Rat): > 5.000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): > 2.000 mg/kg

Fuels, diesel; Gasoil ?unspecified:

Acute oral toxicity	:	LD50 (Rat): 7.500 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 4,1 mg/l Exposure time: 4 h Test atmosphere: vapor
Acute dermal toxicity	:	LD50 (Mouse): 24.500 mg/kg

Skin corrosion/irritation

Product:

Result	:	
Remarks	:	Causes skin irritation.

Serious eye damage/eye irritation

Product:

Result :
Remarks : Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Product:

Result :
Remarks : Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

Carcinogenicity

Product:

Reproductive toxicity

Product:

STOT-single exposure

Product:

Target Organs : Central nervous system
Assessment :
Remarks : May cause drowsiness or dizziness.

STOT-repeated exposure

Product:

Target Organs : Liver, thymus, Bone
Remarks : May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity

Product:

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish :
Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae/aquatic plants	:	Remarks: No data available
Toxicity to microorganisms	:	Remarks: No data available

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labeled prior to recycling or disposal. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
Contaminated packaging	:	Contact local or business unit authorities for guidance on disposal of product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 1202
Proper shipping name	:	DIESEL FUEL
Class	:	3

Packing group	:	III
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	366

IMDG-Code

UN number	:	UN 1202
Proper shipping name	:	DIESEL FUEL
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	yes

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

Not applicable for product as supplied.

Domestic regulation

TDG

UN number	:	UN 1202
Proper shipping name	:	DIESEL FUEL
Class	:	3
Packing group	:	III
Labels	:	3
ERG Code	:	128
Marine pollutant	:	yes

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

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

DSL	:	On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with

x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Revision Date : 2023/01/03

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

CA / EN

SAFETY DATA SHEET

GASOLINE, UNLEADED

SDS Number: 000003000644

Version: 4.0 Revision Date: 2023/04/19 Print Date: 2023/04/20

SECTION 1. IDENTIFICATION

Product name	:	GASOLINE, UNLEADED
Product code	:	11949, 11000, 10999, 10998, 10995, 10993, 10991, 10990, 10989, 10988, 10987, 10474, 10473, 10461, 10455, 10111, 10108, 10097, 10096, 10040, 10039
Other means of identification	:	TN-PE-TM15-X00-1499; LVB87, Regular, Unleaded Gasoline (US Grade), Mid-Grade, Plus, Super, WinterGas, Summer-Gas, Supreme, SuperClean, SuperClean WinterGas, Regu-larClean, PlusClean, Premium, marked or dyed gasoline, TQRUL, transitional quality regular unleaded, BOB, Blend-stock for Oxygenate Blending, Conventional Gasoline, RUL, MUL, SUL, PUL, Additive Denaturant

Manufacturer or supplier's details

Company name of supplier Address	:	Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary, Alberta T2P 3E3 Canada, Telephone: 1-866-786-2671
Emergency telephone	:	CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887; Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

Recommended use	:	Unleaded gasoline is used in spark ignition engines including motor vehicles, inboard and outboard boat engines, small engines such as chain saws and lawn mowers, and recrea-tional vehicles.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Flammable liquids	:	Category 1
Skin irritation	:	Category 2
Germ cell mutagenicity	:	Category 1B
Carcinogenicity	:	Category 1A
Reproductive toxicity	:	Category 2

Specific target organ toxicity - single exposure	:	Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure	:	Category 1
Aspiration hazard	:	Category 1

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements :

H224 Extremely flammable liquid and vapor.
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 of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.

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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately

all contaminated clothing. Rinse skin with water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
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 dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Gasoline; Low boiling point naphtha - unspecified	Gasoline; Low boiling point naphtha - unspecified	86290-81-5	85 - 100
toluene	toluene	108-88-3	0 - 40
benzene	benzene	71-43-2	0.006 - 1.5
ethanol	ethanol	64-17-5	0 - 0.3
methanol	methanol	67-56-1	0 - 0.08

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.

In case of skin contact : In case of contact, immediately flush skin with plenty of water

		for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Seek medical advice.
In case of eye contact	:	Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	:	Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice.
Most important symptoms and effects, both acute and delayed	:	Respiratory, skin and eye irritation; nausea; cancer. Inhalation may cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Chronic exposure to benzene may result in increased risk of leukemia and other blood disorders.
Indication of immediate medical attention and special treatment needed, if necessary	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO2) Water fog. Foam
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during fire fighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO2), nitrogen oxides (NOx), polynuclear aromatic hydrocarbons, phenols, aldehydes, ketones, smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment	:	Wear self-contained breathing apparatus and full protective

for fire-fighters	wear. Wear a positive-pressure supplied-air respirator with full face-piece.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions. Mark the contaminated area with signs and prevent access to unauthorized personnel. Only qualified personnel equipped with suitable protective equipment may intervene.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Gasoline; Low boiling point naphtha -unspecified	86290-81-5	TWA	300 ppm	CA AB OEL
		STEL	500 ppm	CA AB OEL
		TWA	300 ppm	CA BC OEL
		STEL	500 ppm	CA BC OEL
		TWA	300 ppm	ACGIH
		STEL	500 ppm	ACGIH
ethanol	64-17-5	STEL	1,000 ppm	CA BC OEL
		STEV	1,000 ppm	CA QC OEL
		TWA	300 ppm	CA AB OEL
		STEL	500 ppm	CA AB OEL
		STEL	1,000 ppm	ACGIH
methanol	67-56-1	TWA	200 ppm	CA BC OEL
		STEL	250 ppm	CA BC OEL
		TWA	200 ppm	CA AB OEL
		STEL	250 ppm	CA AB OEL
		TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
toluene	108-88-3	TWA	20 ppm	CA BC OEL
		TWAEV	20 ppm	CA QC OEL
		TWA	50 ppm	CA AB OEL
		TWA	20 ppm	ACGIH
benzene	71-43-2	TWA	0.5 ppm	CA BC OEL
		STEL	2.5 ppm	CA BC OEL
		TWA	0.5 ppm	CA ON OEL
		STEL	2.5 ppm	CA ON OEL
		TWAEV	0.5 ppm	CA QC OEL
		STEV	2.5 ppm	CA QC OEL
		TWA	300 ppm	CA AB OEL
		STEL	500 ppm	CA AB OEL
		TWA	0.5 ppm	ACGIH
		STEL	2.5 ppm	ACGIH

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection : Concentration in air determines protection needed.
Use respiratory protection unless adequate local exhaust

ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type	:	A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.
Hand protection		
Material	:	polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
Remarks	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	:	Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear liquid.
Color	:	Clear to slightly yellow or green, undyed liquid. May be dyed red for taxation purposes.

Odor	:	Gasoline
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	25 - 225 °C
Flash point	:	-50 - -38 °C Method: Tagliabue.
Evaporation rate	:	No data available
Flammability (solid, gas)	:	not applicable
Self-ignition	:	257 °C
Upper explosion limit / Upper flammability limit	:	7.6 %(V)
Lower explosion limit / Lower flammability limit	:	1.3 %(V)
Vapor pressure	:	< 802.5 mmHg (20 °C)
Relative vapor density	:	3
Relative density	:	0.685 - 0.8
Density	:	No data available
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents, acids and interhalogens.
Hazardous decomposition products	:	May release COx, NOx, phenols, polycyclic aromatic hydrocarbons, aldehydes, ketones, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method Remarks: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Acute toxicity estimate: > 20 mg/L Exposure time: 4 h Test atmosphere: vapor Method: Calculation method Remarks: Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method Remarks: Based on available data, the classification criteria are not met.

Components:

Gasoline; Low boiling point naphtha -unspecified:

Acute oral toxicity	:	LD50 (Rat): 13,600 mg/kg
Acute dermal toxicity	:	LD50 (Rabbit): > 3,750 mg/kg

toluene:

Acute oral toxicity	:	LD50 (Rat): 5,580 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 20 mg/l Exposure time: 4 h Test atmosphere: vapor
Acute dermal toxicity	:	LD50 (Rabbit): 12,125 mg/kg

benzene:

Acute oral toxicity	:	LD50 (Rat): 2,990 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 13700 ppm Exposure time: 4 h Test atmosphere: vapor
Acute dermal toxicity	:	LD50 (Rabbit): > 8,240 mg/kg

ethanol:

Acute oral toxicity	:	LD50 (Rat): 7,060 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 32380 ppm Exposure time: 4 h Test atmosphere: vapor

methanol:

Acute oral toxicity	:	LD50 (Rat): 5,600 mg/kg
Acute dermal toxicity	:	LD50 (Rabbit): 15,800 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Skin sensitization

Based on available data, the classification criteria are not met.

Respiratory sensitization

Based on available data, the classification criteria are not met.

Germ cell mutagenicity
May cause genetic defects.

Carcinogenicity
May cause cancer.

Reproductive toxicity
Suspected of damaging fertility or the unborn child.

STOT-single exposure
May cause drowsiness or dizziness.

Product:

Target Organs	:	Central nervous system

STOT-repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Product:

Aspiration toxicity
May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae/aquatic plants	:	Remarks: No data available
Toxicity to microorganisms	:	Remarks: No data available

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labeled prior to recycling or disposal. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
Contaminated packaging	:	Contact local or business unit authorities for guidance on disposal of product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 1203
Proper shipping name	:	Gasoline
Class	:	3
Packing group	:	II
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	364

IMDG-Code

UN number	:	UN 1203
Proper shipping name	:	GASOLINE
Class	:	3
Packing group	:	II
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	yes

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

Not applicable for product as supplied.

Domestic regulation

TDG

UN number	:	UN 1203

Proper shipping name	:	GASOLINE
Class	:	3
Packing group	:	II
Labels	:	3
ERG Code	:	128
Marine pollutant	:	yes

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

NPRI Components : toluene
benzene
ethanol
methanol
xylene
Naphtha (petroleum), hydrotreated heavy; Low boiling point ydrogen treated naphtha
Ethylbenzene
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified
naphthalene
1,2,4-trimethylbenzene

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

DSL : All components of this product are on the Canadian DSL

Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	:	8-hour, time-weighted average

ACGIH / STEL	:	Short-term exposure limit
CA AB OEL / STEL	:	Short term exposure limit
CA AB OEL / TWA	:	Time weighted average
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA AB OEL / STEL	:	15-minute occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA BC OEL / STEL	:	short-term exposure limit
CA ON OEL / TWA	:	Time-Weighted Average Limit (TWA)
CA ON OEL / STEL	:	Short-Term Exposure Limit (STEL)
CA QC OEL / TWAEV	:	Time-weighted average exposure value
CA QC OEL / STEV	:	Short-term exposure value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Revision Date : 2023/04/19

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific

material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

CA / EN

GD Lube

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)
Issue date: 11/26/2021 Revision date: 11/26/2021 Version: 1.0

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Product name : GD Lube

1.2. Recommended use and restrictions on use

Recommended use : Drilling Lubricant

1.3. Supplier

Supplier
Canadian Drilling Fluids Ltd
31 Prestwick Place SE
T2Z 4P4 Calgary, AB - Canada
T +1 306 717 3370

1.4. Emergency telephone number

Emergency number : +1 306 717 3370

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Not classified.

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

No labelling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of WHMIS 2015

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : If skin irritation occurs: Wash skin with plenty of water. Obtain medical attention if irritation persists.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.

Symptoms/effects after skin contact : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Carbon dioxide (CO_2). Dry chemical powder. Foam. Water. Water spray.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media : None known.

5.3. Specific hazards arising from the hazardous product

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon. Oxides of sulfur.

5.4. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and materials for containment and cleaning up

For containment : Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Provide ventilation.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke.
Hygiene measures : Wash contaminated clothing before reuse. Always wash hands after handling the product.
Additional hazards when processed : Spills of this material are a slipping hazard.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool and well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Wear suitable gloves

Eye protection:
Safety glasses or goggles are recommended when using product.

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Other information:
Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance	:	No data available
Colour	:	dark brown
Odour	:	Oily
Odour threshold	:	No data available
pH	:	7 – 7.2
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Melting point	:	No data available
Freezing point	:	-18 °C (0 °F)
Boiling point	:	300 °C (572 °F)
Flash point	:	290 °C (554 °F)
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Not flammable
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Partition coefficient n-octanol/water	:	No data available
Viscosity, kinematic	:	No data available
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

Reactivity	:	No dangerous reactions known under normal conditions of use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reactions known under normal conditions of use.
Conditions to avoid	:	Heat.
Incompatible materials	:	None known.
Hazardous decomposition products	:	May include, and are not limited to: oxides of carbon. Oxides of sulfur.
Hardening time:	:	No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified.
Acute toxicity (dermal)	:	Not classified.
Acute toxicity (inhalation)	:	Not classified.
Skin corrosion/irritation	:	Not classified. pH: 7 – 7.2
Serious eye damage/irritation	:	Not classified. pH: 7 – 7.2
Respiratory or skin sensitization	:	Not classified.
Germ cell mutagenicity	:	Not classified.
Carcinogenicity	:	Not classified.
Reproductive toxicity	:	Not classified.
STOT-single exposure	:	Not classified.
STOT-repeated exposure	:	Not classified.
Aspiration hazard	:	Not classified.
Symptoms/effects after inhalation	:	May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	:	May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after eye contact	:	May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/effects after ingestion	:	May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Other information	:	Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	:	May cause long-term adverse effects in the aquatic environment.
Hazardous to the aquatic environment, short-term (acute)	:	Not classified.
Hazardous to the aquatic environment, long-term (chronic)	:	Not classified.

12.2. Persistence and degradability

GD Lube	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

GD Lube	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone	:	Not classified.
Other information	:	No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations	:	Dispose in a safe manner in accordance with local/national regulations. Recycle empty containers where allowed.

SECTION 14: Transport information

In accordance with TDG

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (TDG)	:	Not applicable

14.3. Transport hazard class(es)

TDG

Transport hazard class(es) (TDG)	:	Not applicable

14.4. Packing group

Packing group (TDG) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

TDG
No data available

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

Not applicable

SECTION 15: Regulatory information

15.1. National regulations

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories.

15.2. International regulations

No additional information available

SECTION 16: Other information

Issue date : 11/26/2021
Revision date : 11/26/2021

Other information : None.
Prepared by : Nexreg Compliance Inc.
www.Nexreg.com

Safety Data Sheet (SDS), Canada - Nexreg 2021

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

GD Mud

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)
Issue date: 11/26/2021 Revision date: 11/26/2021 Version: 1.0

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Product name : GD Mud

1.2. Recommended use and restrictions on use

Recommended use : Drilling fluid additive

1.3. Supplier

Supplier
Canadian Drilling Fluids Ltd
31 Prestwick Place SE
T2Z 4P4 Calgary, AB - Canada
T +1 306 717 3370

1.4. Emergency telephone number

Emergency number : +1 306 717 3370

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Not classified.

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

No labelling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of WHMIS 2015

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : If skin irritation occurs: Wash skin with plenty of water. Obtain medical attention if irritation persists.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.

Symptoms/effects after skin contact : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Foam. Dry chemical powder.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media : None known.

5.3. Specific hazards arising from the hazardous product

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon. Oxidizers. chlorine. acrolein. Nitrates. other pyrolysis products typical of burning organic material. Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.

5.4. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and materials for containment and cleaning up

For containment : Spilled material may present a slipping hazard. Remove all sources of ignition. Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Provide ventilation.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Hygiene measures : Take off all contaminated clothing and wash its before reuse. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool and well-ventilated place. Keep in original containers. Keep away from food, drink and animal feedingstuffs. Keep away from strong oxidizers. Do not store in unlabelled containers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Wear suitable gloves

Eye protection:
Safety glasses with side shields. Do not wear contact lenses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Other information:
Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Yellow liquid.
Colour	:	Yellow
Odour	:	No data available
Odour threshold	:	No data available
pH	:	7 – 9
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Not flammable
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	Water: Miscible
Partition coefficient n-octanol/water	:	No data available
Viscosity, kinematic	:	No data available
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

Reactivity	:	No dangerous reactions known under normal conditions of use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reactions known under normal conditions of use.
Conditions to avoid	:	Heat. Incompatible materials.
Incompatible materials	:	Strong oxidizers.
Hazardous decomposition products	:	May include, and are not limited to: oxides of carbon. Chlorine. acrolein. Nitrates. Other pyrolysis products typical of burning organic material. Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.
Hardening time:	:	No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified.
Acute toxicity (dermal)	:	Not classified.
Acute toxicity (inhalation)	:	Not classified.
Skin corrosion/irritation	:	Not classified. pH: 7 – 9

Serious eye damage/irritation	: Not classified. pH: 7 – 9
Respiratory or skin sensitization	: Not classified.
Germ cell mutagenicity	: Not classified.
Carcinogenicity	: Not classified.
Reproductive toxicity	: Not classified.
STOT-single exposure	: Not classified.
STOT-repeated exposure	: Not classified.
Aspiration hazard	: Not classified.
Symptoms/effects after inhalation	: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	: May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/effects after ingestion	: May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Other information	: Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: May cause long-term adverse effects in the aquatic environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified.
Hazardous to the aquatic environment, long-term (chronic)	: Not classified.

12.2. Persistence and degradability

GD Mud	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

GD Mud	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone	: Not classified.
Other information	: No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Recycle empty containers where allowed.

SECTION 14: Transport information

In accordance with TDG

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (TDG) : Not applicable

14.3. Transport hazard class(es)

TDG
Transport hazard class(es) (TDG) : Not applicable

14.4. Packing group

Packing group (TDG) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

TDG
No data available

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

Not applicable

SECTION 15: Regulatory information

15.1. National regulations

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories.

15.2. International regulations

No additional information available

SECTION 16: Other information

Issue date : 11/26/2021
Revision date : 11/26/2021

Other information : None.
Prepared by : Nexreg Compliance Inc.
www.Nexreg.com

Safety Data Sheet (SDS), Canada - Nexreg 2021

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Grizzly Grease

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)
Issue date: 12/13/2021 Revision date: 12/13/2021 Version: 1.0

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Product name : Grizzly Grease

1.2. Recommended use and restrictions on use

Recommended use : Drilling Fluid Additive

1.3. Supplier

Supplier
Canadian Drilling Fluids Ltd
31 Prestwick Place SE
T2Z 4P4 Calgary, AB
Canada
T +1 306 717 3370

1.4. Emergency telephone number

Emergency number : +1 306 717 3370

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Acute Tox. 4 (Oral)	H302	Harmful if swallowed.

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms (GHS-CA) :

Signal word (GHS CA) : Warning

Hazard statements (GHS-CA) : H302 - Harmful if swallowed.
Precautionary statements (GHS-CA) : P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P330 - Rinse mouth.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Chemical name / Synonyms	Product identifier	%
Barium, acetate tallow fatty acids complexes	Tallow fatty acid, acetic acid, barium salt / Tallow fatty acid, acetic acid, barium salts	CAS-No.: 68201-19-4	10 – 30
Distillates, petroleum, hydrotreated heavy naphthenic	Petroleum distillates, hydrotreated heavy naphthenic / Distillates (petroleum), hydrotreated heavy naphthenic / Distillates (petroleum) hydrotreated heavy naphthenic / Naphtha, hydrotreated heavy distillate / Distillates, petroleum, hydrotreated heavy naphthenic (A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C20-50 and produces a finished oil of at least 100 SUS at 100°F (19cSt at 40°C). It contains relatively few normal paraffins.) / Petroleum distillate hydrotreated heavy naphthenic	CAS-No.: 64742-52-5	10 – 30

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : If skin irritation occurs: Wash skin with plenty of water. Obtain medical attention if irritation persists.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : IF SWALLOWED: Rinse mouth. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call a POISON CENTER/doctor if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.

Symptoms/effects after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Symptoms/effects after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Symptoms/effects after ingestion : Harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media : Do not use water jet.

5.3. Specific hazards arising from the hazardous product

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.4. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and materials for containment and cleaning up

For containment : Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Provide ventilation.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not swallow. When using do not eat, drink or smoke. Handle and open container with care. Avoid formation of aerosol. Provide adequate ventilation.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Store tightly closed in a dry, cool and well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Wear suitable gloves

Eye protection:

Safety glasses or goggles are recommended when using product.

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Other information:
Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Semi-solid.
Colour	:	Brown
Odour	:	Petroleum-like odour
Odour threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	370 – 595 °C
Flash point	:	> 163 °C
Ignition temperature	:	> 315 °C
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Not flammable
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Density	:	0.94314 g/cm³ (@ 20 °C)
Solubility	:	Not miscible or difficult to mix.
Partition coefficient n-octanol/water	:	No data available
Viscosity, kinematic	:	150 mm²/s
Explosive limits	:	Product does not present an explosion hazard

9.2. Other information

Solvent content (Water)	:	0.0%
Solids content	:	30.0%

SECTION 10: Stability and reactivity

Reactivity : No dangerous reactions known under normal conditions of use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No dangerous reactions known under normal conditions of use.
Conditions to avoid : Heat. Incompatible materials.
Incompatible materials : Strong oxidizing agents.
Hazardous decomposition products : May include, and are not limited to: oxides of carbon.
Hardening time: : No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified.
Acute toxicity (inhalation) : Not classified.

ATE CA (oral)	1666.667 mg/kg bodyweight

Barium, acetate tallow fatty acids complexes (68201-19-4)	
ATE CA (oral)	500 mg/kg bodyweight
ATE CA (Gases (except aerosol dispensers and lighters))	4500 ppmv/4h
ATE CA (vapours)	11 mg/l/4h
ATE CA (dust,mist)	1.5 mg/l/4h

Distillates, petroleum, hydrotreated heavy naphthenic (64742-52-5)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg

Skin corrosion/irritation : Not classified.
Serious eye damage/irritation : Not classified.
Respiratory or skin sensitization : Not classified.
Germ cell mutagenicity : Not classified.
Carcinogenicity : Not classified.
Reproductive toxicity : Not classified.
STOT-single exposure : Not classified.
STOT-repeated exposure : Not classified.

Distillates, petroleum, hydrotreated heavy naphthenic (64742-52-5)	
LOAEL (oral, rat, 90 days)	125 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	≈ 1000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)

Aspiration hazard : Not classified.

Grizzly Grease	
Viscosity, kinematic	150 mm²/s

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.
Symptoms/effects after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.
Symptoms/effects after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Symptoms/effects after ingestion : Harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.
Hazardous to the aquatic environment, short-term (acute) : Not classified.
Hazardous to the aquatic environment, long-term (chronic) : Not classified.

Distillates, petroleum, hydrotreated heavy naphthenic (64742-52-5)	
LC50 - Fish [1]	> 5000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 - Crustacea [1]	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)

12.2. Persistence and degradability

Grizzly Grease	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Grizzly Grease	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone : Not classified.
Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. Must not be disposed together with household garbage. Do not allow product to reach sewage system. The generation of waste should be avoided or minimized wherever possible.

SECTION 14: Transport information

In accordance with TDG

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (TDG) : Not applicable

14.3. Transport hazard class(es)

TDG
Transport hazard class(es) (TDG) : Not applicable

14.4. Packing group

Packing group (TDG) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

TDG
No data available

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

Not applicable

SECTION 15: Regulatory information

15.1. National regulations

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories

15.2. International regulations

No additional information available

SECTION 16: Other information

Issue date : 12/13/2021
Revision date : 12/13/2021

Other information : None.
Prepared by : Nexreg Compliance Inc.
www.Nexreg.com

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

Safety Data Sheet (SDS), Canada - Nexreg 2021

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

Material Safety Data Sheet

JET A/A-1 AVIATION TURBINE FUEL

1 . Product and company identification

Product name : JET A/A-1 AVIATION TURBINE FUEL

Synonym : Jet A-1; Jet A-1-DI; Aviation Turbine Kerosene (ATK); JP-8; NATO F-34; Jet F-34; Turbine Fuel, Aviation, Kerosene Type (CAN/CGSB-3.32)

Code : W213, SAP: 149

Material uses : Used as aviation turbine fuel. May contain a fuel system icing inhibitor. In the arctic, Jet A-1 may also be used as diesel fuel (if it contains a lubricity additive) and heating oil.

Manufacturer : PETRO-CANADA
P.O. Box 2844
150 – 6th Avenue South-West
Calgary, Alberta
T2P 3E3

In case of emergency : Petro-Canada: 403-296-3000
Canutec Transportation: 613-996-6666
Poison Control Centre: Consult local telephone directory for emergency number(s).

2 . Hazards identification

Physical state : Clear liquid.

Odour : Kerosene-like.

WHMIS (Canada) :

Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2A: Material causing other toxic effects (Very toxic).

The WHMIS classification of Jet A/A-1 is B3.
The WHMIS classification of Jet A/A-1-DI, JP-8, Jet F-34 and NATO F-34, which all contain FSII (Diethylene Glycol Monomethyl Ether), is B3, D2A.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : CAUTION!

COMBUSTIBLE LIQUID AND VAPOUR. MAY CAUSE EYE AND SKIN IRRITATION. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA.

Combustible liquid. Slightly irritating to the eyes and skin. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapour or mist. Avoid contact with eyes, skin and clothing. Contains material which may cause birth defects, based on animal data. Avoid exposure during pregnancy. Use only with adequate ventilation. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.

Ingestion : Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract.

Skin : Slightly irritating to the skin.

Eyes : Slightly irritating to the eyes.

Potential chronic health effects

Chronic effects : No known significant effects or critical hazards.

2 . Hazards identification

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Contains material which may cause birth defects, based on animal data.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis.

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Complex mixture of petroleum hydrocarbons (C9-C16)*(Kerosene)	8008-20-6	99.9
Fuel System Icing Inhibitor (FSII) (if added**): (Diethylene Glycol Monomethyl Ether)	111-77-3	0.1 - 0.15
Anti-static, antioxidant and metal deactivator additives	Not applicable	<0.1

*Aromatic content is 25% maximum (benzene: nil).
**Please note that Jet A-1-DI, JP-8, Jet F-34 and NATO F-34 all contain Fuel System Icing Inhibitor.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First-aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : Class II - combustible liquid (NFPA).

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

5 . Fire-fighting measures

Products of combustion : Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), smoke and irritating vapours as products of incomplete combustion.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards : Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite. May accumulate in confined spaces.

Special remarks on explosion hazards : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

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

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

7 . Handling and storage

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Ensure the storage containers are grounded/bonded.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Kerosene	**ACGIH TLV (United States). Absorbed through skin.** TWA: 200 mg/m³ 8 hour(s).

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Recommended: polyvinyl alcohol (PVA), Viton®. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

8 . Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Clear liquid.

Flash point : Closed cup: ≥38°C (≥100.4°F) [Tag. Closed Cup]

Auto-ignition temperature : 210°C (410°F)

Flammable limits : Lower: 0.7%
Upper: 5%

Colour : Clear and colourless.

Odour : Kerosene-like.

Odour threshold : Not available.

pH : Not available.

Boiling/condensation point : 140 to 300°C (284 to 572°F)

Melting/freezing point : Not available.

Relative density : 0.775 to 0.84 (Water=1)

Vapour pressure : 0.7 kPa (5.25 mm Hg) @ 20°C (68ºF).

Vapour density : 4.5 [Air = 1]

Volatility : Volatile.

Evaporation rate : Not available.

Viscosity : 1.0 - 1.9 cSt @ 40ºC (104ºF)

Pour point : <-51ºC (<-60°F)

Solubility : Insoluble in water. Partially miscible in some alcohols. Miscible with other petroleum solvents.

10 . Stability and reactivity

Chemical stability : The product is stable.

Hazardous polymerisation : Under normal conditions of storage and use, hazardous polymerisation will not occur.

Materials to avoid : Reactive with oxidising agents, acids and alkalis.

Hazardous decomposition products : May release COx, NOx, SOx, aldehydes, acids, ketones, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Kerosene	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	>5000 mg/m³	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Carcinogenicity

11 . Toxicological information

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Kerosene	A3	3	-	-	-	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1863	FUEL, AVIATION, TURBINE ENGINE	3	III		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Combustible liquid

Canada

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2A: Material causing other toxic effects (Very toxic).

The WHMIS classification of Jet A/A-1 is B3.
The WHMIS classification of Jet A/A-1-DI, JP-8, Jet F-34 and NATO F-34, which all contain FSII (Diethylene Glycol Monomethyl Ether), is B3, D2A.

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

International regulations

Canada inventory : All components are listed or exempted.

United States inventory (TSCA 8b) : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

16 . Other information

Label requirements : COMBUSTIBLE LIQUID AND VAPOUR. MAY CAUSE EYE AND SKIN IRRITATION. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :

Health	*	2
Flammability		2
Physical hazards		0
Personal protection		H

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

References : Available upon request.
™ Trademark of Suncor Energy Inc. Used under licence.

Date of printing : **5/24/2012.**

Date of issue : 24 May 2012

Date of previous issue : 5/24/2012.

Responsible name : **Product Safety - DSR**

Indicates information that has changed from previously issued version.

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds

Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

For Product Safety Information: (905) 804-4752

Notice to reader

16 . Other information

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.

Linseed Soap

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)
Issue date: 12/13/2021 Revision date: 12/13/2021 Version: 1.0

SECTION 1: Identification

1.1. Product identifier

Product form : Substance
Substance name : Linseed Soap

1.2. Recommended use and restrictions on use

Recommended use : Lubricant

1.3. Supplier

Supplier
Canadian Drilling Fluids Ltd
31 Prestwick Place SE
T2Z 4P4 Calgary, AB
Canada
T +1 306 717 3370

1.4. Emergency telephone number

Emergency number : +1 306 717 3370

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Not classified.

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

No labelling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Linseed Soap

Name	Chemical name / Synonyms	Product identifier	%
Fatty acids, linseed-oil, sodium salts	Linseed oil acids, sodium salt / Linseed oil fatty acid, sodium salt / Linseed oil fatty acids, sodium salt / Linseed oil, sodium salt	CAS-No.: 68154-76-7	100

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : None under normal conditions. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : If skin irritation occurs: Wash skin with plenty of water. Obtain medical attention if irritation persists.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Give water to drink. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : No adverse effects due to inhalation are expected. May cause irritation to the respiratory tract.

Symptoms/effects after skin contact : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/effects after ingestion : May be harmful if swallowed in large quantities. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media : Do not use water jet.

5.3. Specific hazards arising from the hazardous product

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.4. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and materials for containment and cleaning up

For containment : Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment. Spill area may be slippery.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Wash off with plenty of water.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not swallow. When using do not eat, drink or smoke. Handle and open container with care.

Hygiene measures : Wash contaminated clothing before reuse. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Store tightly closed in a dry, cool and well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Wear suitable gloves

Eye protection:
Safety glasses or goggles are recommended when using product.

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
None necessary under normal conditions of use.In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Other information:
Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Paste.
Colour	:	Yellow-brown
Odour	:	Mild soap
Odour threshold	:	No data available
pH	:	≥ 10.5 - < 11.5
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Melting point	:	≈ -1 °C
Freezing point	:	No data available
Boiling point	:	100 °C
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Not flammable
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Density	:	0.9 – 0.95 g/cm³
Solubility	:	Water: 100 %
Partition coefficient n-octanol/water	:	No data available
Viscosity, kinematic	:	No data available
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

Reactivity	:	No dangerous reactions known under normal conditions of use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reactions known under normal conditions of use.
Conditions to avoid	:	Heat.
Incompatible materials	:	None known.
Hazardous decomposition products	:	May include, and are not limited to: oxides of carbon.
Hardening time:	:	No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified.
Acute toxicity (dermal)	:	Not classified.
Acute toxicity (inhalation)	:	Not classified.
Skin corrosion/irritation	:	Not classified. pH: ≥ 10.5 - < 11.5
Serious eye damage/irritation	:	Not classified. pH: ≥ 10.5 - < 11.5
Respiratory or skin sensitization	:	Not classified.
Germ cell mutagenicity	:	Not classified.
Carcinogenicity	:	Not classified.
Reproductive toxicity	:	Not classified.

STOT-single exposure	:	Not classified.
STOT-repeated exposure	:	Not classified.
Aspiration hazard	:	Not classified.
Symptoms/effects after inhalation	:	No adverse effects due to inhalation are expected. May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	:	May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	:	May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/effects after ingestion	:	May be harmful if swallowed in large quantities. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Other information	:	Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	:	May cause long-term adverse effects in the aquatic environment.
Hazardous to the aquatic environment, short-term (acute)	:	Not classified.
Hazardous to the aquatic environment, long-term (chronic)	:	Not classified.

12.2. Persistence and degradability

Linseed Soap	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Linseed Soap	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone	:	Not classified.
Other information	:	No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations	:	Dispose in a safe manner in accordance with local/national regulations. The generation of waste should be avoided or minimized wherever possible. Recycle empty containers where allowed.

SECTION 14: Transport information

In accordance with TDG

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (TDG) : Not applicable

14.3. Transport hazard class(es)

TDG
Transport hazard class(es) (TDG) : Not applicable

14.4. Packing group

Packing group (TDG) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

TDG
No data available

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

Not applicable

SECTION 15: Regulatory information

15.1. National regulations

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories.

15.2. International regulations

No additional information available

SECTION 16: Other information

Issue date : 12/13/2021
Revision date : 12/13/2021
Other information : None.
Prepared by : Nexreg Compliance Inc.
www.Nexreg.com

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

Safety Data Sheet (SDS), Canada - Nexreg 2021

Poly Core

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)
Issue date: 8/31/2021 Revision date: 8/31/2021 Version: 1.0

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Product name : Poly Core

1.2. Recommended use and restrictions on use

Recommended use : Processing aid

1.3. Supplier

Supplier
Canadian Drilling Fluids Ltd
31 Prestwick Place SE
T2Z 4P4 Calgary, AB - Canada
T +1 306 717 3370

1.4. Emergency telephone number

Emergency number : +1 306 717 3370

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Not classified.

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

No labelling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of WHMIS 2015

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : If skin irritation occurs: Wash skin with plenty of water. Obtain medical attention if irritation persists.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.

Symptoms/effects after skin contact : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Carbon dioxide (CO2). Dry chemical powder. Foam. Water. Water spray.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media : None known.

5.3. Specific hazards arising from the hazardous product

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon. Nitrogen oxides. Ammonia. Hydrogen cyanide.

5.4. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and materials for containment and cleaning up

For containment : Contain spill, then place in a suitable container. Minimize dust generation. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Vacuum or sweep material and place in a disposal container. Avoid generating dust. Provide ventilation.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid breathing and generating dust. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Good housekeeping is important to prevent accumulation of dust.

Hygiene measures : Wash contaminated clothing before reuse. Always wash hands after handling the product.

Additional hazards when processed : Spills of this material are a slipping hazard.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool and well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Wear suitable gloves. (PVC gloves/plastic gloves)

Eye protection:
Safety glasses or goggles are recommended when using product.

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Other information:
Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Granules.
Colour	:	White
Odour	:	No data available
Odour threshold	:	No data available
pH	:	5 – 9 at 5 g/L
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Melting point	:	> 150 °C
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	Product will not self-ignite
Decomposition temperature	:	> 150 °C
Flammability (solid, gas)	:	No data available
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	0.6 – 0.9
Solubility	:	Water: Soluble
Partition coefficient n-octanol/water	:	-2
Viscosity, kinematic	:	No data available
Explosive properties	:	KSt = 0 Non-flammable to ignition sources <2.5 kJ
Oxidising properties	:	Not expected to be oxidising based on the chemical structure.
Explosive limits	:	Not expected to create explosive atmospheres.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

Reactivity	:	No dangerous reactions known under normal conditions of use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Exothermic reaction on contact with : Strong oxidizing agents. Contact with strong bases liberates ammonia.
Conditions to avoid	:	Heat. Incompatible materials.
Incompatible materials	:	Strong oxidizers. Strong bases.
Hazardous decomposition products	:	May include, and are not limited to: oxides of carbon. Nitrogen oxides. Ammonia. Hydrogen cyanide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified.
Acute toxicity (dermal)	:	Not classified.
Acute toxicity (inhalation)	:	Not classified.

Poly Core	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 5000 mg/kg

Poly Core	
LC50 inhalation rat	The product is not expected to be toxic by inhalation

Skin corrosion/irritation : Not classified.
pH: 5 – 9 at 5 g/L

Serious eye damage/irritation : Not classified.
pH: 5 – 9 at 5 g/L

Respiratory or skin sensitization : Not classified.

Germ cell mutagenicity : Not classified.

Carcinogenicity : Not classified.

Reproductive toxicity : Not classified.

STOT-single exposure : Not classified.

STOT-repeated exposure : Not classified.

Aspiration hazard : Not classified.

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.

Symptoms/effects after skin contact : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

Hazardous to the aquatic environment, short-term (acute) : Not classified.

Hazardous to the aquatic environment, long-term (chronic) : Not classified.

Poly Core	
LC50 - Fish [1]	> 100 mg/l Danio rerio/96 hours (OECD 203)
LC50 - Fish [2]	> 100 mg/l Fathead minnow/96 hours (OECD 203)
EC50 - Crustacea [1]	> 100 mg/l Daphnia magna/48 hours (OECD 202)
ErC50 algae	> 100 mg/l Scenedesmus subspicatus/72 hours (OECD 201)
Bioconcentration factor (BCF REACH)	≈ 0
Partition coefficient n-octanol/water	-2

12.2. Persistence and degradability

Poly Core	
Persistence and degradability	Not readily biodegradable.
Hydrolysis	Will not undergo hydrolysis.

12.3. Bioaccumulative potential

Poly Core	
Bioaccumulative potential	No bioaccumulation.
Bioconcentration factor (BCF REACH)	≈ 0

Poly Core	
Partition coefficient n-octanol/water	-2

12.4. Mobility in soil

Poly Core	
Partition coefficient n-octanol/water	-2

12.5. Other adverse effects

Ozone : Not classified.
Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Recycle empty containers where allowed.

SECTION 14: Transport information

In accordance with TDG

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (TDG) : Not applicable

14.3. Transport hazard class(es)

TDG
Transport hazard class(es) (TDG) : Not applicable

14.4. Packing group

Packing group (TDG) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

TDG
No data available

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

Not applicable

SECTION 15: Regulatory information

15.1. National regulations

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories

15.2. International regulations

No additional information available

SECTION 16: Other information

Issue date : 08/31/2021
Revision date : 08/31/2021

Other information : None.
Prepared by : Nexreg Compliance Inc.
www.Nexreg.com

Safety Data Sheet (SDS), Canada - Nexreg 2021

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SAFETY DATA SHEET

PROPANE

SDS Number: 000003000646

Version: 5.0 Revision Date: 2023/01/30 Print Date: 2023/01/31

SECTION 1. IDENTIFICATION

Product name	:	PROPANE
Product code	:	12021
Other means of identification	:	Propane HD-5, Propane commercial, Liquified Petroleum Gas (LPG), C3H8, CGSB Propane Grade 1, CGSB Propane Grade 2, odorized propane, stenched propane, automotive propane, ER62

Manufacturer or supplier's details

Company name of supplier Address	:	Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary, Alberta T2P 3E3 Canada, Telephone: 1-866-786-2671
Emergency telephone	:	CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887; Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

Recommended use	:	Propane is used as a fuel gas, refrigerant and as a raw material for organic synthesis. It is also used as a laboratory gas. The grade determines the propane content. It is supplied as pressurized liquid in tanks.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Flammable gases	:	Category 1
Gases under pressure	:	Liquefied gas
Simple Asphyxiant	:	Category 1

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary Statements :

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response:

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 In case of leakage, eliminate all ignition sources.

Storage:

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (%)
propane	propane	74-98-6	72 - 100
propene	propene	115-07-1	0 - 23.8
butane	butane	106-97-8	0 - 4.7
ethane	ethane	74-84-0	0 - 4.6
isobutane	isobutane	75-28-5	0 - 3.6
isopentane	isopentane	78-78-4	0 - 1
pentane	pentane	109-66-0	0 - 0.9
but-1-ene	but-1-ene	106-98-9	0 - 0.5
methane	methane	74-82-8	0 - 0.2

All above concentrations are percent by volume.

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.

In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

		Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash contaminated clothing before reuse. Seek medical advice.
In case of eye contact	:	Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	:	Not a significant route of exposure.
Most important symptoms and effects, both acute and delayed	:	Inhalation may cause central nervous system effects. Inhalation of vapours may cause drowsiness, headache, dizziness and disorientation. May cause irritation of respiratory tract. Contact with rapidly expanding gas may cause burns or frostbite. Overexposure may lead to cardiac sensitization. High concentrations can remove oxygen and cause dizziness or suffocation.
Indication of immediate medical attention and special treatment needed, if necessary	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	No information available.
Specific hazards during fire fighting	:	If the product release cannot be shut off safely, allow the product to burn itself out. Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO2), smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus and full protective wear. Wear a positive-pressure supplied-air respirator with full facepiece.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. In case of inadequate ventilation wear respiratory protection. Remove all sources of ignition. Pay attention to the spreading of gases especially at ground level (heavier than air) and to the direction of the wind. Mark the contaminated area with signs and prevent access to unauthorized personnel. Only qualified personnel equipped with suitable protective equipment may intervene.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Ensure adequate ventilation. Use explosion-proof ventilation equipment. Non-sparking tools should be used. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin, eyes and clothing. Avoid breathing gas. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Use only with adequate ventilation. Keep away from heat and sources of ignition. Keep container closed when not in use. Do not use sparking tools. Do not enter areas where used or stored until adequately ventilated.
Conditions for safe storage	:	Store in original container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers. To maintain product quality, do not store in heat or direct sunlight. Keep away from sources of ignition - No smoking. Ensure the storage containers are grounded/bonded.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
propane	74-98-6	TWA	1,000 ppm	CA AB OEL
propene	115-07-1	TWA	500 ppm	CA BC OEL
		TWAEV	500 ppm	CA QC OEL
		TWA	500 ppm	ACGIH
butane	106-97-8	TWA	1,000 ppm	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
ethane	74-84-0	TWA	1,000 ppm	CA AB OEL
isobutane	75-28-5	TWA	1,000 ppm	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
isopentane	78-78-4	TWAEV	1,000 ppm	CA QC OEL
		TWA	1,000 ppm	CA BC OEL
		TWA	1,000 ppm	ACGIH

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Use explosion-proof ventilation equipment.

Personal protective equipment

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : Always wear NIOSH-approved self-contained breathing apparatus when handling this material.

Hand protection

Material : Wear insulated gloves to prevent frostbite. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection	:	Wear safety glasses with side shields or goggles.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use. Wear suitable protective equipment.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Gas at room temperature; liquid when stored under pressure., compressed liquefied gas
Color	:	colorless
Odor	:	Propane is an odourless gas. Odourized propane will contain up to 30 g Ethyl Mercaptan per 1000 L of propane.
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	-42 °C
Flash point	:	-104 °C Method: closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Extremely flammable gas.
Upper explosion limit / Upper flammability limit	:	9.5 %(V)
Lower explosion limit / Lower flammability limit	:	2.1 %(V)
Vapor pressure	:	10,763 mmHg (38 °C)

Relative vapor density	:	1.56
Relative density	:	No data available
Density	:	No data available
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	450 °C
Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Reactive with oxidising agents and halogenated compounds.
Hazardous decomposition products	:	May release COx, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity : Remarks: Based on available data, the classification criteria are not met.

Acute inhalation toxicity	:	Remarks: Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	Remarks: Based on available data, the classification criteria are not met.

Components:

butane:

Acute inhalation toxicity	:	LC50 (Rat): 658 mg/l Exposure time: 4 h Test atmosphere: gas

isopentane:

Acute inhalation toxicity	:	LC50 (Rat): 280 mg/l Exposure time: 4 h Test atmosphere: vapor

pentane:

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 364 mg/l Exposure time: 4 h Test atmosphere: vapor

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Skin sensitization

Based on available data, the classification criteria are not met.

Respiratory sensitization

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae/aquatic plants	:	Remarks: No data available
Toxicity to microorganisms	:	Remarks: No data available

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labeled prior to recycling or disposal. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
Contaminated packaging	:	Contact local or business unit authorities for guidance on disposal of product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 1978
Proper shipping name	:	Propane
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	Flammable Gas
Packing instruction (cargo aircraft)	:	200

IMDG-Code

UN number	:	UN 1978
Proper shipping name	:	PROPANE
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1
EmS Code	:	F-D, S-U
Marine pollutant	:	no

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

Not applicable for product as supplied.

Domestic regulation

TDG

UN number	:	UN 1978
Proper shipping name	:	PROPANE
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1
ERG Code	:	115
Marine pollutant	:	no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

NPRI Components : propane
propene
butane
isobutane
isopentane
pentane

but-1-ene
n-hexane

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

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory
DSL	:	All components of this product are on the Canadian DSL
ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory

Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA QC OEL / TWAEV	:	Time-weighted average exposure value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory con-

centration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Revision Date : 2023/01/30

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

CA / EN

APPENDIX 2 – IMMEDIATELY REPORTABLE SPILL QUANTITIES

APPENDIX 2 – IMMEDIATELY REPORTABLE SPILL QUANTITIES

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.

APPENDIX 3 – NT/NU SPILL REPORT

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
Tel: (867) 920-8130 • Email: spills@gov.nt.ca

REPORT LINE USE ONLY

A	Report Date: MM DD YY	Report Time:	☐ Original Spill Report **OR** ☐ Update # _____ to the Original Spill Report	**Report Number:**
B	Occurrence Date: MM DD YY	Occurrence Time:		
C	Land Use Permit Number (if applicable):		Water Licence Number (if applicable):	
D	Geographic Place Name or Distance and Direction from the Named Location:		Region: ☐ NT ☐ Nunavut ☐ Adjacent Jurisdiction or Ocean	
E	Latitude: _____ Degrees _____ Minutes _____ Seconds		Longitude: _____ Degrees _____ Minutes _____ Seconds	
F	Responsible Party or Vessel Name:		Responsible Party Address or Office Location:	
G	Any Contractor Involved:		Contractor Address or Office Location:	
H	Product Spilled: ☐ Potential Spill	Quantity in Litres, Kilograms or Cubic Metres:	U.N. Number:	
I	Spill Source:	Spill Cause:	Area of Contamination in Square Metres:	
J	Factors Affecting Spill or Recovery:	Describe Any Assistance Required:	Hazards to Persons, Property or Environment:	
K	Additional Information, Comments, Actions Proposed or Taken to Contain, Recover or Dispose of Spilled Product and Contaminated Materials:			

L	Reported to Spill Line by:	Position:	Employer:	Location Calling From:	Telephone:
M	Any Alternate Contact:	Position:	Employer:	Alternate Contact Location:	Alternate Telephone:

REPORT LINE USE ONLY

N	Received at Spill Line by:	Position:	Employer:	Location Called:	Report Line Number:

Lead Agency: ☐ EC ☐ CCG/TCMSS ☐ GNWT ☐ GN ☐ ILA ☐ AANDC ☐ NEB ☐ Other: _____

Significance: ☐ Minor ☐ Major ☐ Unknown

File Status: ☐ Open ☐ Closed

Agency:	**Contact Name:**	**Contact Time:**	**Remarks:**
Lead Agency:			
First Support Agency:			
Second Support Agency:			
Third Support Agency:			