# SPILL CONTINGENCY AND FUEL MANAGEMENT PLAN

Nut Lake Property, NU

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# 1 Introduction

This Spill Contingency and Fuel Management Plan ("SCFMP") has been developed on behalf of Greenridge Exploration ("Greenridge" or the "Company") in accordance with applicable legislation, guidelines, and best practices which applies to activities associated with the Nut Lake Property, Nunavut, Canada.

The SCFMP will come into effect in May 2024, pending approval from all relevant regulatory bodies and will be replaced if there are any significant changes to the activities outlines in the existing permits.

Along with this SCFMP, an Emergency Response Plan ("ERP"), Environmental Management Plan ("EMP"), Waste Management Plan ("WMP"), Abandonment and Restoration Plan ("ARP"), and Radiation Hazard Control Plan ("RHCP") will be created for the Property as part of a property-wide management system.

## 1.1 Project Description

The Nut Lake Property (the "Property" or the "Project") consists of three contiguous mineral claims covering approximately 4,036 hectares (~40km$^2$) located on National Topographic System ("NTS") map sheet 065O01 and centered at 533,130mE, 6993205mN North American Datum 1983 ("NAD83") Universal Transverse Mercator ("UTM") Zone 14N. Greenridge entered into an Option Agreement with three optionors to acquire 100% interest in the Property. The Nut Lake Property is situated entirely on crown land and located approximately 175km southwest of Qamani'tuaq (Baker Lake). See Appendix 1 for Property Location Map.

Greenridge is proposing a 2024 field program for the Property that is anticipated to commence on July 25, and finish on or around August 26. The 2024 exploration program will include the establishment of a seasonal eight-person camp with fuel cache to be constructed around the northeast portion of the property near an unnamed lake (potential camp 1: 529783mE, 6996000mN; potential camp 2: 529021mE, 6995340mN). Structures for the proposed camp will include 3 sleeper tents, 1 kitchen tent, 1 dry tent (with showers), 1 office tent, generator shack, and outhouses/pacto system. Most of the structures will be canvas prospector tents, or similar, with plywood floors.

Three camp construction personnel will be on site for a total of 8 days (5 days for set up and 3 days for take down). Staff on site for the duration of the work program will consist of 4 geologists, 2 helicopter-company personnel, 1 cook, and 1 camp manager. Total amount of time spent on site will amount to approximately 208 man-days.

All waste will be brought back to Qamani'tuaq (Baker Lake) for disposal.

The proposed field program will consist of general exploration activities such as prospecting, geological mapping, geochemical sampling (rock, soil, and till), drone photogrammetry and/or airborne geophysical survey.

The proposed work will be helicopter-supported and require the occasional landing of the aircraft. To mitigate any potential impact on wildlife, the helicopter will always maintain a minimum altitude of

610 m (2,100 ft) above ground level except during landing, take-off or if there is a specific requirement for low level flying (e.g. airborne surveys). Wildlife will be avoided, and the helicopter will not land in the presence of wildlife except in an emergency.

All empty fuel drums will be brought back to Qamani'tuaq (Baker Lake).

Greenridge is awaiting NPC determination to determine if a Nunavut Impact Review Board ("NIRB") Screening will be required. The Company is also currently applying for a Land Use Permit ("LUP") from Crown-Indigenous Relations and Northern Affairs Canada ("CIRNAC") and a Nunavut Water Board ("NWB") water license to authorize the proposed seasonal camp.

Absolutely no activities will be conducted that will interfere with caribou cows and calves, and no exploration activities will cause a diversion in the migration patterns of any caribou. Greenridge will communicate with all interested parties regarding caribou sightings and appraised movements in the area.

Notifications will be sent to the Hamlet and the Hunters and Trappers Organization, and in the event that further consultation is required, Greenridge will ensure that best efforts are made to engage with the community and organizations as advised by regulatory agencies.

### 1.2 Purpose and Scope

The SCFMP offers clear guidelines for the storage and management of fuels and other potentially dangerous substances. Its aim is to minimize the likelihood of environmental pollution and safeguard the well-being of personnel in case of accidental material release. In the event of such an occurrence, the SCFMP outlines precise response protocols. The objectives of this plan include:

- Encourage the safe management and utilization of potentially dangerous substances
- Encourage efficient and secure recovery of spilled hazardous materials
- Minimize environmental harm caused by spills on both water and land
- Establish clear responsibilities and reporting protocols for spill incidents
- Offer site-specific details about facility infrastructure and emergency procedures
- Ensure easy access to emergency information for cleanup teams, management, and governmental bodies
- Adhere to federal and territorial regulations and guidelines concerning the development of a Spill Prevention and Response Plan, as well as notification obligations in the event of a spill.

### 1.3 Greenridge Exploration Environmental Statement

Greenridge Exploration's environmental statement is aimed at fully complying with existing laws and regulations to safeguard the environment. We plan to actively collaborate with other groups dedicated to environmental preservation and ensure that our employees, contractors, government entities, and the public are well-informed about our environmental protection procedures.

The Spill Contingency and Fuel Management Plan is thoroughly communicated to all staff and contractors during their on-site orientation sessions. During these orientation sessions, comprehensive training is provided to ensure that employees and contractors understand the necessary steps to take in the event of a spill. They are acquainted with the locations of spill kits,

their contents, and receive training in the proper utilization of spill equipment and spill response procedures. Our commitment extends to keeping our personnel updated on the latest technologies and methods related to spill response.

# 2 Hazardous Materials On-Site

This section will detail the products that are anticipated to be the most commonly hazardous materials utilized at the Nut Lake Property (Table 2.1). The list is anticipated to change due to updated technologies and methods related to spill response or changes to the exploration program. Any changes will be reflected in future revisions of this plan. All Material Safety Data Sheets ("MSDS")/Safety Data Sheets ("SDS") for hazardous materials on site are included within this plan and can be found in Appendix 2.

## 2.1 Fuel

For the 2024 exploration program, a fuel cache will be established proximal to the camp to primarily store diesel and jet fuel along with smaller quantities of gasoline, propane, cleaning products, motor oil, and waste oil. All fuel will be stored no closer than the regulated distance of 30 meters from any body of water.

Diesel, jet fuel, and gasoline will be stored in 205L steel drums while propane will be stored in 100lbs cylinders. Waste oil will be sealed and removed from the Property for proper disposal.

*Table 2.1 List of Hazardous Materials On-Site*

| Quantity | Equipment and Purpose |
|---|---|
| 25 | 205L Drums of Diesel Fuel for camp |
| 90 | 205L Drums of Jet Fuel for helicopter |
| 2 | 205L Drums of Gasoline for generators and pumps |
| 8 | 100lbs Cylinders of Propane for cooking |
| | |

## 2.2 Other Hazardous Materials

Other hazardous materials needed or present at the Property, such as cleaning chemicals, will be transported to Baker Lake for proper disposal. All hazardous materials will be stored in their original containers within the hazardous materials cache/area.

### *2.2.1 Chemicals*

The chemicals used on-site may include household-strength cleaning supplies like Lysol, ammonia-based sprays, wash soaps, hand sanitizer, degreasers, and similar items. Additionally, limited miscellaneous items such as insect repellent and aerosols will be provided. All these items will be stored in their original containers within designated storage areas and will be removed off-site at the end of the program.

### *2.2.2 Motor Oil*

Approximately 6 liters of motor oil will be kept on-site at camp. These oils will be supplied in either 1-liter plastic containers and will be replenished as necessary throughout

operations. They will primarily serve as crankcase oils for diesel engines powering the electrical generator and gasoline engines in smaller equipment like portable generators. Storage for these containers will be outdoors, placed on pallets, and covered with polyethylene sheeting and tarps or on spill containment pallets.

## 3 Preventative Measures

Greenridge Exploration acknowledges the various risks associated with the utilization, storage, and transfer of hazardous materials. Below are some potential risks that may be encountered at the Nut Lake Property:

- Containers, such as steel tanks and 205L drums, carry the risk of leaking or rupturing if mishandled.
- Older or refilled drums are particularly susceptible to leaks around the bungs if the seals are not adequately maintained.
- Water and spills might accumulate in the secondary containment area, potentially causing overflow.
- Motorized equipment could encounter fuel or oil leaks due to various factors such as malfunctions, impacts, insufficient maintenance, improper storage, or incorrect operation.
- Leaks or spills may occur during fuel/materials transfer due to over-filling, improper procedures, or faulty equipment.

Below are the preventive measures formulated to reduce the potential risks associated with storing, utilizing, and transferring hazardous materials expected to be present at the Property:

- All personnel tasked with handling fuel, chemicals, and hazardous materials will receive appropriate training.
- A strong emphasis on spill prevention will be enforced at the Property.
- All hazardous materials will be stored in original or appropriately labeled containers.
- All fuels and hazardous materials, including waste, will be stored within "Arctic Insta-Berms" or similar products for secondary containment. These berms utilize chemical and fire-resistant fabric designed for extreme arctic temperatures and puncture resistance.
- "RainDrain" or similar hydrocarbon filtration systems will be utilized to safely remove any water collected inside secondary containment berms and to guard against potential overflows of contaminated water.
- An extra fuel storage container, equal to or larger than the largest fuel container, will be kept on-site.
- Incompatible products within secondary containment will be segregated.
- Drums and containers will remain sealed or closed when not in use.
- All hazardous materials in use and storage areas will be shielded from weather and physical damage.
- The most recent MSDS/SDS (Appendix 2) for all hazardous materials will be accessible to all personnel on-site.
- All hazardous materials will be kept, stored, or transferred a minimum distance of 31 meters from the normal high-water mark of any water body.

- Adequate spill kits and firefighting equipment will be strategically located near areas where hazardous materials are stored, used, or transferred.
- Fuel drums not in use will be stored on their sides in organized rows with the bungs in the three o'clock and nine o'clock positions. Ideally, they will be stood upright 1 to 2 days prior to use to allow any contaminants to settle.
- Propane cylinders will be equipped with pressure release valves to prevent excessive internal pressure buildup. Labels indicating data such as date of manufacture and re-testing dates will be applied to the collar of propane cylinders.
- Propane will be stored in suitable, certified containers. Regular inspections and monitoring of propane containers will be conducted to detect any signs of deterioration or corrosion. Containers will be securely fastened in an upright position to prevent damage to the regulator in case of a fall.
- All maintenance tasks for camp or exploration equipment will adhere to specific procedures, which include the utilization of portable drip pans to handle motor fluids and other waste, effectively containing potential spills. Regular preventative maintenance will be conducted to minimize the risk of leaks.
- Appropriate fire extinguishers and other firefighting equipment will be strategically located near where any hazardous materials are used, stored or transferred.

### 3.1 Transportation of Fuel and Other Hazardous Materials to Site

Before being transported to the site, all fuel drums, tanks, or other containers will undergo inspection to identify any defects such as torn, missing, or twisted gaskets, punctures, etc. A second inspection will be conducted upon arrival at the camp and the fuel cache. Throughout transport, regulations specified in the Transportation of Dangerous Goods Act and other pertinent legislation will be strictly followed. Empty drums will be taken off-site for appropriate disposal or refill in Baker Lake.

### 3.2 Transfer of Fuel and Other Hazardous Materials

Manual and automatic pumps, along with aviation fuel filters for jet fuel, are utilized for transferring all petroleum products. Smoking, sparks, open flames, and any potential ignition sources will be strictly banned within a 100-meter radius of any site where hazardous materials are stored or during fuel transfer and refueling operations. Portable drip trays and fuel transfer hoses equipped with pumps, sized appropriately, are employed when refueling aircraft or other equipment to prevent any leaks or drips onto the ground.

Any personnel responsible for handling or storing fuel will undergo appropriate training, including instruction on operating and maintaining fuel transfer and storage equipment. All on-site staff will receive training in accordance with the guidelines outlined in this document.

Chemicals will typically be transferred directly from their original containers to the machinery they are intended for use in. Given the operational context, usually less than 20 liters of product will be transferred at a time. Spill kits will be readily available to clean up any spills that may occur during the transfer process.

For solid products, bags will be opened directly over the tanks where the product will be used. Any used chemical products will be returned to empty containers and stored for later shipment off-site. Used motor oil will be collected in sealed, labeled 20-liter pails and stored for shipment off-site.

### 3.3 Signs, Labels, and Inspections

All hazardous materials will be clearly labeled according to the Workplace Hazardous Materials Information System (WHMIS) and other relevant legislation, providing essential details such as material type, safe handling procedures, MSDS/SDS references (Appendix 2), company name, and delivery date to the site. Signs displaying this information, along with MSDS/SDS (Appendix 2) for each material, will be prominently placed at every storage or transfer site, alongside "No Smoking" signs where hazardous materials are stored or transferred.

Monitoring and inspections of storage containers, transfer equipment, and secondary containment will be continuous throughout the program. Inspections will occur each time a hazardous material is used to identify any damaged or leaking containers, with findings documented in a fuel inspection record/log. Any discovered damage that has the potential to cause a leak will also be recorded. In the event of a leak, the substance will either be used immediately or transferred to an undamaged container.

The Project Field Supervisor will oversee the monitoring and inspection program, maintaining a detailed inventory of all fuel and hazardous materials on-site.

### 3.4 Spill Containment Equipment

Spill kits and firefighting equipment will be strategically positioned near areas where hazardous materials are stored, used, or transferred, including at camp, and any other necessary locations.

Appropriate fire extinguishers and other firefighting equipment will be strategically located near where any hazardous materials are used, stored, or transferred.

The typical spill kit has a sorbent capacity of 240 litres and includes:

| Quantity | Material |
|---|---|
| 1 | 360 litre/79 gallon polyethylene over pack drum |
| 4 | Oil sorbent booms (5” X 10’) |
| 100 | Oil sorbent sheets (16.5” X 20” X 3/8”) |
| 1 | Drain cover (36” X 36” X 1/16”) |
| 1 | Caution tape (3” X 500’) |
| 1 | 1 lb plugging compound |
| 2 | Pair Nitrile gloves |
| 2 | Pair Safety goggles |
| 2 | Pair Tyvel coveralls |
| 1 | Instruction booklet |
| 10 | Printed disposable bags (24” X 48”) |
| 1 | Empty fuel drum |
| | |

# 4 Response Organization

This excerpt from the “Northwest Territories-Nunavut Spills Working Agreement” defines a “minor spill” and a “major spill”:

> *“**Minor Spill***
>
> *A minor spill is one having little or no actual or anticipated risk to, or adverse impact on persons, property, or the environment. Minor spills are of short duration and are quickly contained and cleaned up by the RP. They involve contaminants of relatively low toxicity, and the extent (area) of the spill is limited.*
>
> *An immediate on-scene investigation of a minor spill is usually unnecessary. The usual course of action upon receipt of a spill report is immediate communication by telephone with the RP and follow-up investigation by a duly authorized enforcement officer within the routine inspection schedule.*
>
> ***Major Spill***
>
> *A major spill is one having, or is anticipated to have, substantial adverse impact or hazard to persons, property, or the environment. These spills may range from a small quantity of a very toxic or hazardous material to a large quantity of a less toxic substance. Containment is often difficult, and there may be a potential for further spillage. This category of spill incident also includes those which have a severe local impact or which have the potential for serious public concerns.*
>
> *A major spill usually requires an immediate on-scene presence. The officer of the Lead Agency shall monitor major spills closely, exercise good judgment when investigating the incident, and be sensitive to the public’s perception of the spill. These spills often involve considerable enforcement action, and extensive consultation among government departments and Parties to this Agreement.”*

In the event of a spill or environmental emergency, it's crucial to respond immediately, ensuring safety and environmental responsibility. A spill is considered immediately reportable if it poses an imminent threat to the environment or human health, or if it surpasses the specified volume thresholds outlined in Appendix 3 titled "Schedule 1 – Reportable Quantities for NT-NU Spills" taken from the “Northwest Territories-Nunavut Spill Working Agreement”. Such spills must be reported promptly to the Nunavut 24-Hour Spill Report Line at 1-867-920-8130. The https://www.gov.nu.ca/en/environment-and-wildlife/spill-response website provides the Spill Report Form (also attached as Appendix 4) and the Guide to reporting a spill.


If you encounter evidence of a fuel or other contaminant spill, please report it to the 24 hour spill line.

If you are responsible for a spill of over 100 L of fuel, or if you do not know how much spilled, you are legally required to report it.

To report a spill you can simply call **867-920-8130** - 24 hours a day. You can also complete the form available at the link below and fax it to **867-873-6924** or e-mail it to spills@gov.nt.ca.

**Pease do the right thing and Report All Spills!**

Please see our Contingency Planning Guide and click on the links below to download important spill-related documents:

Contingency planning and spill reporting in Nunavut / Electronic Spill Report Guide

Spill Report Form

The Project Manager will serve as the On-Site Coordinator for the Property and will be responsible for appointing and training suitable personnel.

On-Site Coordinator: TBD

Project Manager: TBD

Aside from the On-Site Coordinator and the Project Manager, approximately 2-8 personnel are present on-site to aid in spill response and cleanup operations. The number of personnel on-site fluctuates depending on the exploration activities being carried out during the program.

### 4.1 Spill Response

The following steps are to be acted upon either the person responsible for the spill or any witnesses:

1. **Assess** safety hazards and risks.
2. **Always ensure** the safety of all persons.
3. **Identify** the spilled substance and its source.
4. **Eliminate** ignition source(s), if safe to do so.
5. **Stop the flow** of the spill (shut off valve, stand up drum, etc.), if safe to do so.
6. **Contain** the spill or environmental hazard, if safe to do so.
7. **Inform** the Project Manager or On-Site Coordinator.
8. **Request** assistance (if required).
9. **Implement** any necessary cleanup/remedial action.
10. **Photograph** if and where possible, during and after cleanup.

### 4.2 Responsibilities of the On-Site Coordinator

1. Assume full authority over the spill scene and coordinate all personnel involved.
2. Assess the spill situation and formulate a comprehensive plan of action.
3. Activate the spill contingency plan promptly.
4. Immediately report the spill to designated authorities, including:

| | |
|---|---|
| NT-NU 24-Hour Spill Report Line | Tel: (867) 920-8130<br>Fax: (867) 873-692 |
| Crown Indigenous Relations and Northern Affairs Canada (CIRNAC) Land Use Resource Management Officer | (867) 645-2840 |
| Other regulatory agencies and Greenridge Exploration management | (refer to *Table 4.2.1 – Emergency Contacts*) |

5. Secure additional manpower, equipment, and materials if not readily available on-site for spill response.

### 4.3 Responsibilities of the Project Manager

1. Provide regulatory agencies and Greenridge Exploration management with information regarding the status of the cleanup activities.
2. Act as a spokesperson on behalf of Greenridge Exploration management with regulatory agencies as well as the public and media.
3. Prepare and submit a report on the spill incident to regulatory agencies (including the CIRNAC Inspector) within 30 days of the event.

*Table 4.1 Emergency Contacts*

| CONTACT | TELEPHONE NUMBER |
|---|---|
| Greenridge Exploration | (604) 630-1585 |
| On-Site Project Geologist | *Information to be supplied once phone system is established on the property* |
| CIRNAC - Land Use Inspector | (867) 975-4295 |
| Environment Canada 24-hour Duty Officer | (867) 766-3737, (867) 873-8185 (Fax) |
| CIRNAC– Water Resource Officers, Rankin Inlet and Iqaluit, NU | Rankin Inlet (867) 645-2831<br>Iqaluit (867) 975-4298 |
| Kivalliq Inuit Association | (867) 645-5725 |
| Baker Lake Fire Department | (867) 793-2900 |
| RCMP, Baker Lake | (867) 793-1111 |
| Health Centre – Baker Lake | (867) 793-2816 |
| Fisheries and Oceans | (867) 979-8007 |
| Nunavut Department of Environment | (867) 975-7700 |
| Nunavut Department of Environment, Waste Manifests | (867) 975-7748 |
| Manager, Pollution Control and Air Quality, Environmental Protection, Govt of Nunavut | (867) 975-7748; (867) 975-7739 (Fax) |

# 5 Containment Procedures/ Action Plans

Before initiating containment procedures, it's essential to ensure that it's safe to do so. Always prioritize the use of appropriate personal protective equipment (PPE), such as gloves, goggles/safety glasses, masks/respirators, etc., along with other necessary safety gear, before attempting to contain a spill.

To initiate spill containment effectively:

1. Begin by assessing what will be affected by the spill.
2. Evaluate the speed and direction of the spill, as well as factors contributing to its movement, such as water, wind, or slope.
3. Determine the optimal location for containing the spill, making sure to avoid water bodies whenever possible.
4. Have a contingency plan prepared in case the spill escalates beyond control or if external factors hinder containment efforts. Being proactive in planning for potential complications is crucial for effective spill response.

**NOTE:**

- The Material Safety Data Sheets (MSDS) for all hazardous materials involved in this project are provided in Appendix 2.
- Precautions must be taken to ensure the safety of personnel, and spilled products should be confined to control burning. This can be achieved by containing the spilled material using dikes, trenches, depressions, or ice slots. Before any attempts at in-situ burning, consultation with experts and approval from government authorities are necessary.
- Chemical response methods are available and may involve the use of dispersants, emulsion-treating agents, visco-elastic agents, herding agents, solidifiers, and shoreline cleaning agents.
- Biological response methods include nutrient enrichment and natural microbe seeding.
- Site remediation will be conducted in accordance with the guidance and advice provided by government authorities.

## 5.1 Spills on Land (gravel, rock, soil, and vegetation)

Where feasible, implement trenching or ditching to intercept or contain the flow of fuel or petroleum products on land. This method is particularly effective in areas with loose sand, gravel, or surface layers of organic materials. However, trenching in rocky substrates is typically impractical or impossible.

Construct a soil berm downslope of the spill to further contain the spread. Synthetic, impervious sheeting can also serve as a barrier in containment efforts.

Utilize manual or mechanical means, such as shovels, heavy equipment, and pumps, to recover spills wherever possible. Synthetic sorbent pad materials are effective for absorbing petroleum residue.

Recover both spilled and contaminated materials, including soil and vegetation, and transport them to approved disposal or recovery sites. The choice of equipment for cleanup depends on the scale and location of the spill.

Note that land-based disposal is only authorized with approval from government authorities.

### 5.2 Spills on Snow

Where feasible, employ trenching or ditching techniques to intercept or contain the flow of fuel or petroleum products on snow-covered terrain. This method is effective where snow, ice, loose sand, gravel, or surface layers of organic materials are present. However, trenching in solid, frozen ground, or rocky substrates is typically impractical or impossible.

Compact the snow around the outer perimeter of the spill area to reinforce containment. Construct a dike or dam using snow, either manually with shovels or with heavy equipment like graders or dozers if available. If possible, utilize synthetic lines to create an impervious barrier at the spill site.

Identify the low point within the spill area and clear channels in the snow, directing them away from waterways, to facilitate the flow of non-absorbed material into the low point.

Once collected in the low area, consider shoveling spilled material into containers for removal. Transport contaminated material to approved disposal sites. The choice of equipment for cleanup depends on the scale and location of the spill.

### 5.3 Spills on Ice

Utilize the methods described for containing material spills on snow, if feasible, along with mechanical recovery using heavy equipment. It's crucial to prevent fuel or petroleum products from penetrating ice and entering watercourses. Promptly remove contaminated material, including snow and ice, as soon as possible.

Containment of fuel or petroleum products under the ice surface poses challenges due to ice thickness and winter conditions. However, if these materials penetrate the ice, take the following steps:

1. Determine the area where the fuel or petroleum product is located.
2. Use an ice auger to drill holes through the ice, allowing for the location of the fuel or petroleum product.
3. Once detected, cut slits in the ice using chain saws and remove ice blocks to access and remove the spilled material.

These steps are essential for effectively managing spills that have penetrated ice surfaces, therefore, minimizing environmental impact and facilitating cleanup efforts.

### 5.4 Spills on Water

Immediately contain spills on open water to limit their size and spread. Floating fuel or petroleum products can be contained using various methods, including booms, absorbent materials, skimming, and the installation of culverts. The following are some steps for containment on spills on water:

- Deploy containment booms to minimize the spill area, although their effectiveness may be affected by factors such as wind and waves.
- Utilize sorbent booms to encircle and gradually absorb spilled material. These booms are hydrophobic, meaning they absorb and repel water.
- Once booms are in place, use skimmers to draw in hydrocarbons along with minimal amounts of water. Skimmed material can then be pumped through hoses into empty fuel tanks or drums.
- Culverts allow water to flow while capturing and collecting fuel on the surface using absorbent materials.
- Consider chemical methods such as dispersants, emulsion-treating agents, and shoreline cleaning as additional options for spill response. These methods may be used in conjunction with other containment and cleanup efforts to effectively manage spills on open water.

### 5.5 Spills due to Accidental Load Release

In the event of external loads of fuel, oil, or chemicals being lost from the helicopter or other methods of transport, an immediate response is imperative. Follow steps below:

1. Obtain GPS coordinates of the spill location and promptly notify the base camp. Provide details regarding the quantity and type of load loss.
2. The On-Site Coordinator or Project Manager will contact the NWT-NU 24-Hour Spill Line ((867) 920-8130) and receive instructions on follow-up procedures from the relevant authorities.
3. Administer the appropriate spill response procedure based on the surface affected, whether it's land, water, snow, or ice. Each surface requires specific protocols to contain and clean up the spill effectively.

## 6 Training

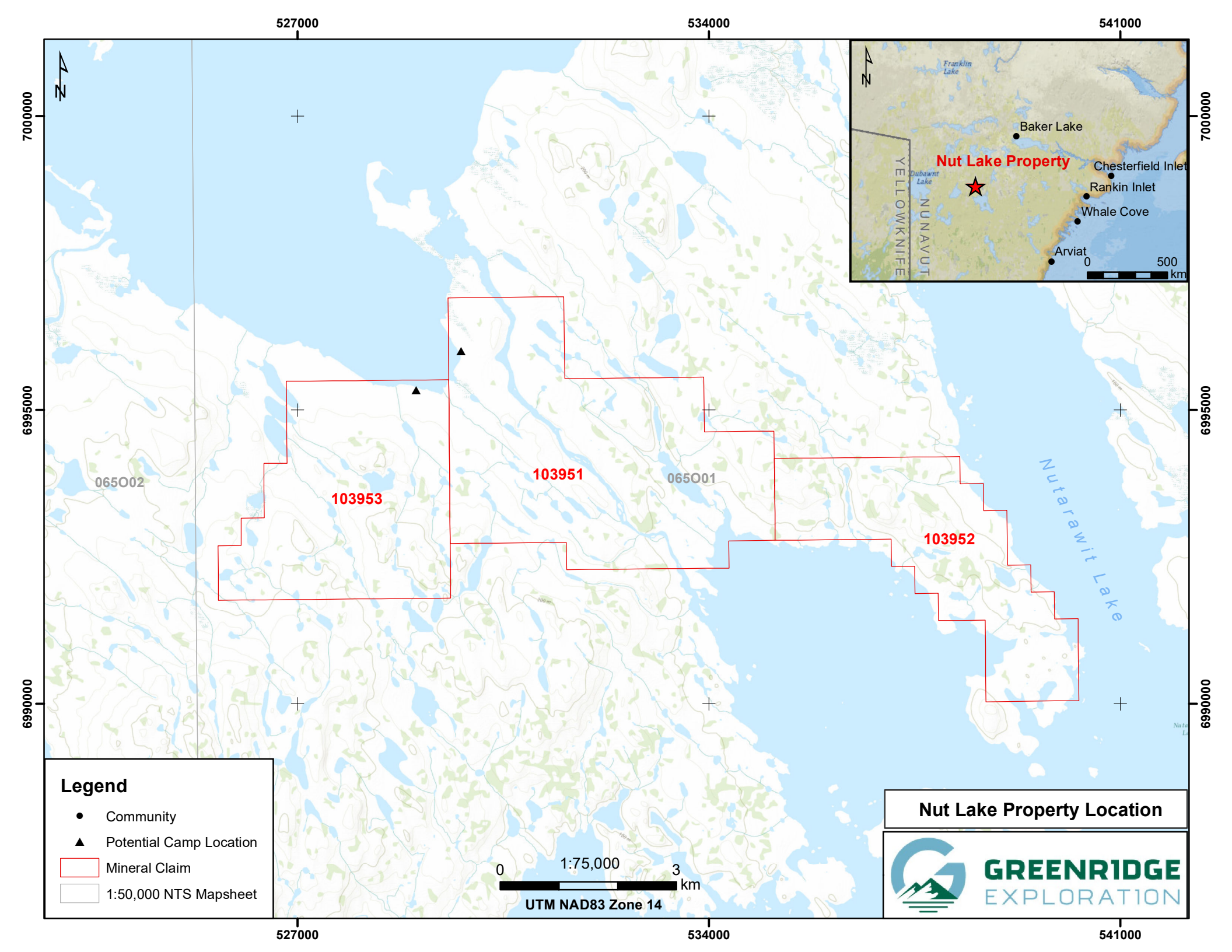
Adequate training in spill response and the use of spill kits is cost-effective and minimizes environmental harm. Proper use of spill kit materials and swift response can prevent minor incidents from escalating into major disasters. All staff, contractors, and visitors must undergo orientation and training in initial spill response procedures and understand spill reporting obligations. Additionally, those handling fuel will receive extra training in safe fuel transfer, spill prevention, and response.

Training will include, but not limited, to the following:

- Review of the SCFMP and personnel responsibilities.
- Location of fuel and chemical storage sites.
- Causes and possible effects of spills.
- Use of on and off-site spill response resources.
- Exercises in spill response and spill kit use.
- Distribution of up-to-date copies of the SCFMP and emergency contact lists.

# APPENDIX 1

## Figures


527000
534000
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103953
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103952
065O02
065O01
Nutarawit Lake
Franklin Lake
Baker Lake
Nut Lake Property
Chesterfield Inlet
Rankin Inlet
Whale Cove
Arviat
Dubawnt Lake
YELLOWKNIFE
NUNAVUT
0
500
km
Legend
Community
Potential Camp Location
Mineral Claim
1:50,000 NTS Mapsheet
0
1:75,000
3
km
UTM NAD83 Zone 14
Nut Lake Property Location
GREENRIDGE EXPLORATION

# APPENDIX 2

## Material Safety Data Sheets/ Safety Data Sheets

# SAFETY DATA SHEET

**Issuing Date** January 5, 2015 **Revision Date** June 12, 2015 **Revision Number** 1

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

**Product identifier**

**Product Name** **Clorox® Regular-Bleach$_1$**

**Other means of identification**

**EPA Registration Number** 5813-100

**Recommended use of the chemical and restrictions on use**

**Recommended use** Household disinfecting, sanitizing, and laundry bleach

**Uses advised against** No information available

**Details of the supplier of the safety data sheet**

**Supplier Address**
The Clorox Company
1221 Broadway
Oakland, CA 94612

Phone: 1-510-271-7000

**Emergency telephone number**

**Emergency Phone Numbers** For Medical Emergencies, call: 1-800-446-1014
For Transportation Emergencies, call Chemtrec: 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

### Classification

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

| | |
|---|---|
| Skin corrosion/irritation | Category 1 |
| Serious eye damage/eye irritation | Category 1 |

### GHS Label elements, including precautionary statements

**Emergency Overview**

**Signal word** **Danger**

**Hazard Statements**
Causes severe skin burns and eye damage
Causes serious eye damage

**Appearance** Clear, pale yellow **Physical State** Thin liquid **Odor** Bleach

### Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves, protective clothing, face protection, and eye protection such as safety glasses.

### Precautionary Statements - Response
Immediately call a poison center or doctor.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
Wash contaminated clothing before reuse.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Specific treatment (see supplemental first aid instructions on this label).
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### Precautionary Statements - Storage
Store locked up.

### Precautionary Statements - Disposal
Dispose of contents in accordance with all applicable federal, state, and local regulations.

### Hazards not otherwise classified (HNOC)
Although not expected, heart conditions or chronic respiratory problems such as asthma, chronic bronchitis, or obstructive lung disease may be aggravated by exposure to high concentrations of vapor or mist.

Product contains a strong oxidizer. Always flush drains before and after use.

**Unknown Toxicity**
Not applicable.

**Other information**
Very toxic to aquatic life with long lasting effects.

**Interactions with Other Chemicals**
Reacts with other household chemicals such as toilet bowl cleaners, rust removers, acids, or products containing ammonia to produce hazardous irritating gases, such as chlorine and other chlorinated compounds.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS-No | Weight % | Trade Secret |
|---|---|---|---|
| Sodium hypochlorite | 7681-52-9 | 5 - 10 | * |

* The exact percentage (concentration) of composition has been withheld as a trade secret.

## 4. FIRST AID MEASURES

**First aid measures**

**General Advice** Call a poison control center or doctor immediately for treatment advice. Show this safety data sheet to the doctor in attendance.

**Eye Contact** Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**Skin Contact** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**Inhalation** Move to fresh air. If breathing is affected, call a doctor.

**Ingestion** Have person sip a glassful of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person. Call a poison control center or doctor immediately for treatment advice.

**Protection of First-aiders** Avoid contact with skin, eyes, and clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

**Most important symptoms and effects, both acute and delayed**

**Most Important Symptoms and Effects** Burning of eyes and skin.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically. Probable mucosal damage may contraindicate the use of gastric lavage.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media**
CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific Hazards Arising from the Chemical**
This product causes burns to eyes, skin, and mucous membranes. Thermal decomposition can release sodium chlorate and irritating gases and vapors.

**Explosion Data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Protective equipment and precautions for firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions** Avoid contact with eyes, skin, and clothing. Ensure adequate ventilation. Use personal protective equipment as required. For spills of multiple products, responders should evaluate the MSDSs of the products for incompatibility with sodium hypochlorite. Breathing protection should be worn in enclosed and/or poorly-ventilated areas until hazard assessment is complete.

**Other Information** Refer to protective measures listed in Sections 7 and 8.

**Environmental precautions**

**Environmental Precautions** This product is toxic to fish, aquatic invertebrates, oysters, and shrimp. Do not allow product to enter storm drains, lakes, or streams. See Section 12 for ecological Information.

**Methods and material for containment and cleaning up**

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Cleaning Up** Absorb and containerize. Wash residual down to sanitary sewer. Contact the sanitary treatment facility in advance to assure ability to process washed-down material.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes, and clothing. Do not eat, drink, or smoke when using this product.

**Conditions for safe storage, including any incompatibilities**

**Storage** Store away from children. Reclose cap tightly after each use. Store this product upright in a cool, dry area, away from direct sunlight and heat to avoid deterioration. Do not contaminate food or feed by storage of this product.

**Incompatible Products** Toilet bowl cleaners, rust removers, acids, and products containing ammonia.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|---|---|---|---|
| Sodium hypochlorite<br>7681-52-9 | None | None | None |

*ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.*

**Appropriate engineering controls**

**Engineering Measures** Showers
Eyewash stations
Ventilation systems

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** If splashes are likely to occur: Wear safety glasses with side shields (or goggles) or face shield.

**Skin and Body Protection** Wear rubber or neoprene gloves and protective clothing such as long-sleeved shirt.

**Respiratory Protection** If irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice. Wash hands after direct contact. Do not wear product-contaminated clothing for prolonged periods. Remove and wash contaminated clothing before re-use. Do not eat, drink, or smoke when using this product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical and Chemical Properties**

| | | | |
|---|---|---|---|
| **Physical State** | Thin liquid | | |
| **Appearance** | Clear | **Odor** | Bleach |
| **Color** | Pale yellow | **Odor Threshold** | No information available |

| **Property** | **Values** | **Remarks/ Method** |
|---|---|---|
| **pH** | ~12 | None known |
| **Melting/freezing point** | No data available | None known |
| **Boiling point / boiling range** | No data available | None known |
| **Flash Point** | Not flammable | None known |
| **Evaporation rate** | No data available | None known |
| **Flammability (solid, gas)** | No data available | None known |
| **Flammability Limits in Air** | | |
| **Upper flammability limit** | No data available | None known |
| **Lower flammability limit** | No data available | None known |
| **Vapor pressure** | No data available | None known |
| **Vapor density** | No data available | None known |
| **Specific Gravity** | ~1.1 | None known |
| **Water Solubility** | Soluble | None known |
| **Solubility in other solvents** | No data available | None known |
| **Partition coefficient: n-octanol/water** | No data available | None known |
| **Autoignition temperature** | No data available | None known |
| **Decomposition temperature** | No data available | None known |
| **Kinematic viscosity** | No data available | None known |
| **Dynamic viscosity** | No data available | None known |
| **Explosive Properties** | Not explosive | |
| **Oxidizing Properties** | No data available | |

**Other Information**

| | |
|---|---|
| **Softening Point** | No data available |
| **VOC Content (%)** | No data available |
| **Particle Size** | No data available |
| **Particle Size Distribution** | No data available |

## 10. STABILITY AND REACTIVITY

**Reactivity**
Reacts with other household chemicals such as toilet bowl cleaners, rust removers, acids, or products containing ammonia to produce hazardous irritating gases, such as chlorine and other chlorinated compounds.

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**
None under normal processing.

**Conditions to avoid**
None known based on information supplied.

**Incompatible materials**
Toilet bowl cleaners, rust removers, acids, and products containing ammonia.

**Hazardous Decomposition Products**
None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information** .

**Inhalation** Exposure to vapor or mist may irritate respiratory tract and cause coughing. Inhalation of high concentrations may cause pulmonary edema.

**Eye Contact** Corrosive. May cause severe damage to eyes.

**Skin Contact** May cause severe irritation to skin. Prolonged contact may cause burns to skin.

**Ingestion** Ingestion may cause burns to gastrointestinal tract and respiratory tract, nausea, vomiting, and diarrhea.

**Component Information**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium hypochlorite<br>7681-52-9 | 8200 mg/kg (Rat) | >10000 mg/kg (Rabbit) | - |

**Information on toxicological effects**

**Symptoms** May cause redness and tearing of the eyes. May cause burns to eyes. May cause redness or burns to skin. Inhalation may cause coughing.

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

**Sensitization** No information available.

**Mutagenic Effects** No information available.

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

| Chemical Name | ACGIH | IARC | NTP | OSHA |
|---|---|---|---|---|
| Sodium hypochlorite<br>7681-52-9 | - | Group 3 | - | - |

***IARC (International Agency for Research on Cancer)***
*Group 3 - Not Classifiable as to Carcinogenicity in Humans*

**Reproductive Toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.
**Chronic Toxicity** Carcinogenic potential is unknown.
**Target Organ Effects** Respiratory system, eyes, skin, gastrointestinal tract (GI).

**Aspiration Hazard** No information available.

**Numerical measures of toxicity - Product Information**

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

**ATEmix (oral)**
54 g/kg
**ATEmix (inhalation-dust/mist)**
58 mg/L

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**
Very toxic to aquatic life with long lasting effects.

This product is toxic to fish, aquatic invertebrates, oysters, and shrimp. Do not allow product to enter storm drains, lakes, or streams.

**Persistence and Degradability**
No information available.

**Bioaccumulation**
No information available.

**Other adverse effects**
No information available.

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods**
Dispose of in accordance with all applicable federal, state, and local regulations. Do not contaminate food or feed by disposal of this product.

**Contaminated Packaging**
Do not reuse empty containers. Dispose of in accordance with all applicable federal, state, and local regulations.

## 14. TRANSPORT INFORMATION

| | |
|---|---|
| **DOT** | Not restricted. |
| **TDG** | Not restricted for road or rail. |
| **ICAO** | Not restricted, as per Special Provision A197, Environmentally Hazardous Substance exception. |
| **IATA** | Not restricted, as per Special Provision A197, Environmentally Hazardous Substance exception. |
| **IMDG/IMO** | Not restricted, as per IMDG Code 2.10.2.7, Marine Pollutant exception. |

## 15. REGULATORY INFORMATION

### Chemical Inventories

| | |
|---|---|
| **TSCA** | All components of this product are either on the TSCA 8(b) Inventory or otherwise exempt from listing. |
| **DSL/NDSL** | All components are on the DSL or NDSL. |

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

### U.S. Federal Regulations

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

**SARA 311/312 Hazard Categories**

| | |
|---|---|
| **Acute Health Hazard** | Yes |
| **Chronic Health Hazard** | No |
| **Fire Hazard** | No |
| **Sudden Release of Pressure Hazard** | No |
| **Reactive Hazard** | No |

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

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---|---|---|---|---|
| Sodium hypochlorite 7681-52-9 | 100 lb | | | X |

**CERCLA**
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs | RQ |
|---|---|---|---|
| Sodium hypochlorite 7681-52-9 | 100 lb | - | RQ 100 lb final RQ<br>RQ 45.4 kg final RQ |

**EPA Statement**
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

> **DANGER: CORROSIVE.** Causes irreversible eye damage and skin burns. Harmful if swallowed. Do not get in eyes, on skin, or on clothing. Wear protective eyewear and rubber gloves when handling this product. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the restroom. Avoid breathing vapors and use only in a well-ventilated area.

## US State Regulations

**California Proposition 65**
This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Chemical Name | New Jersey | Massachusetts | Pennsylvania | Rhode Island | Illinois |
|---|---|---|---|---|---|
| Sodium hypochlorite<br>7681-52-9 | X | X | X | X | |
| Sodium chlorate<br>7775-09-9 | X | X | X | | |

## International Regulations

**Canada**
**WHMIS Hazard Class**
E - Corrosive material

## 16. OTHER INFORMATION

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **NFPA** | **Health Hazard** | 3 | **Flammability** 0 | **Instability** 0 | **Physical and Chemical Hazards** | - |
| **HMIS** | **Health Hazard** | 3 | **Flammability** 0 | **Physical Hazard** 0 | **Personal Protection** | B |

**Prepared By**
Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

**Revision Date** June 12, 2015

**Revision Note** Revision Section 14.

**Reference** 1096036/164964.159

**General Disclaimer**
**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.**

**End of Safety Data Sheet**

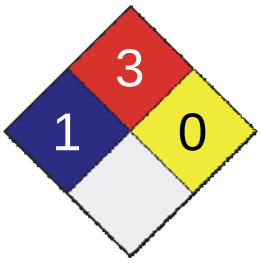
# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

| | |
|---|---|
| **Product Name** | **LYSOL® Brand III Disinfectant Spray (all sizes, all scents)** |
| **CAS #** | Mixture |
| **Product use** | Disinfectant |
| **Distributed by** | Reckitt Benckiser<br>Morris Corporate Center IV<br>399 Interpace Parkway<br>P.O. Box 225<br>Parsippany, NJ 07054-0225<br>In Case of Emergency: 1-800-338-6167<br>Transportation Emergencies: 24 Hour Number:<br>North America: CHEMTREC: 1-800-424-9300<br>Outside North America: 1-703-527-3887 |

| LEGEND HMIS/NFPA | |
|---|---|
| Severe | 4 |
| Serious | 3 |
| Moderate | 2 |
| Slight | 1 |
| Minimal | 0 |

| | | |
|---|---|---|
| Health | * | 1 |
| Flammability | | 3 |
| Physical Hazard | | 0 |
| Personal Protection | | B |




## 2. Hazards Identification

**Emergency overview**

This product is regulated by the US EPA as a disinfectant.
PRECAUTIONARY STATEMENTS: Hazards to humans and domestic animals.
CAUTION
Causes moderate eye irritation. Do not spray in eyes, on skin or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.
PHYSICAL HAZARDS: FLAMMABLE
Contents under pressure. Keep away from heat, sparks and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.

KEEP OUT OF REACH OF CHILDREN.

**Potential short term health effects**

| | |
|---|---|
| **Routes of exposure** | Eye, Skin contact, Inhalation, Ingestion. |
| **Eyes** | Causes moderate eye irritation. |
| **Skin** | Moderately irritating to the skin. |
| **Inhalation** | None expected during normal conditions of use.<br>However intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. |
| **Ingestion** | Contains denatured ethyl alcohol. May be harmful if swallowed. |
| **Target organs** | Blood. Liver. Respiratory system. Central nervous system. Heart. |
| **Chronic effects** | Prolonged or repeated exposure can cause drying, defatting and dermatitis. |
| **Signs and symptoms** | Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. |
| **OSHA Regulatory Status** | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. |
| **Potential environmental effects** | Components of this product have been identified as having potential environmental concerns. |

## 3. Composition / Information on Ingredients

| Ingredient(s) | CAS # | Percent |
|---|---|---|
| Ethanol | 64-17-5 | 40 - 60 |
| Butane | 106-97-8 | 2.5 - 10 |
| Propane | 74-98-6 | 1 - 2.5 |
| Alkyl (40% C12, 50% C14, 10% C16) dimethyl benzyl ammonium saccharinate | Not Applicable | 0 - 0.1 |

## 4. First Aid Measures

**First aid procedures**

**Eye contact** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a Poison Control Center or doctor for treatment advice.

**Skin contact** Wash off immediately with soap and plenty of water for at least 15 minutes. All contaminated clothes and shoes are to be removed and washed before reuse. If symptoms persist, call a physician.

**Inhalation** Move exposed person to fresh air. Get medical attention immediately.

**Ingestion** If swallowed, call physician or Poison Control Centre immediately.

**Notes to physician** Contains denatured ethanol; ingestion may result in ethanol poisoning.
Symptoms may be delayed.
Treat patient symptomatically.

**General advice** Do not puncture or incinerate container. Keep away from sources of ignition. No smoking. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

NOTE TO PARENTS: Intentional misuse by deliberately concentrating and inhaling aerosol products may be harmful or fatal. Help stop inhalation abuse; for information visit www.inhalant.org.

## 5. Fire Fighting Measures

**Flammable properties** Flammable aerosol by flame projection test.
Aerosol flame extension less than 18 inches (45 cm).
Containers may explode when heated.

NFPA AEROSOL LEVEL: Flammability Rating 1, per NFPA 30B

**Extinguishing media**

**Suitable extinguishing media** Water spray. Dry chemical. Carbon dioxide.

**Unsuitable extinguishing media** Not available

**Protection of firefighters**

**Specific hazards arising from the chemical** Contents under pressure. Pressurized container may explode when exposed to heat or flame. Cool containers with flooding quantities of water until well after fire is out.

**Protective equipment for firefighters** Firefighters should wear full protective clothing including self contained breathing apparatus.

**Hazardous combustion products** May include and are not limited to: Oxides of carbon.

**Explosion data**

**Sensitivity to mechanical impact** Not available

**Sensitivity to static discharge** Not available.

## 6. Accidental Release Measures

**Personal precautions** Keep unnecessary personnel away.
Do not touch or walk through spilled material.
Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Keep people away from and upwind of spill/leak.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Do not contaminate water.

**Methods for containment**

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.

**Methods for cleaning up**

Before attempting clean up, refer to hazard data given above. Remove sources of ignition. Although the chance of a significant spill or leak is unlikely in aerosol containers, in the event of such an occurrence, absorb spilled material with a non-flammable absorbent such as sand or vermiculite.

## 7. Handling and Storage

**Handling**

Ensure adequate ventilation.
Wear appropriate personal protective equipment when handling this product.
Wash hands after handling and before eating.
Avoid contact with eyes, skin and clothing.
Do not ingest.
Avoid breathing vapors or mists of this product.
CONTENTS UNDER PRESSURE. DO NOT use in presence of open flame or spark. DO NOT puncture or incinerate container or store at temperatures over 50°C. DO NOT use on polished wood furniture, rayon fabrics, or acrylic plastics. Avoid contact with eyes and food. EXTREMELY FLAMMABLE
Contents under pressure.
Do not puncture or incinerate container.

**Storage**

Store in original container in areas inaccessible to small children.
STORE IN A COOL PLACE AND AWAY FROM DIRECT SUNLIGHT.
Keep away from heat, open flames or other sources of ignition.
Do not reuse container.
Do not puncture or incinerate container.

NOTE TO PARENTS: Intentional misuse by deliberately concentrating and inhaling aerosol products may be harmful or fatal. Help stop inhalation abuse; for information visit www.inhalant.org.

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

## 8. Exposure Controls / Personal Protection

**Exposure limits**

| Ingredient(s) | Exposure Limits |
|---|---|
| Alkyl (40% C12, 50% C14, 10% C16) dimethyl benzyl ammonium saccharinate | **ACGIH-TLV**<br>Not established<br>**OSHA-PEL**<br>Not established |
| Butane | **ACGIH-TLV**<br>TWA: 1000 ppm<br>**OSHA-PEL**<br>Not established |
| Ethanol | **ACGIH-TLV**<br>TWA: 1000 ppm<br>STEL: 1000 ppm<br>**OSHA-PEL**<br>TWA: 1000 ppm |
| Propane | **ACGIH-TLV**<br>TWA: 1000 ppm<br>**OSHA-PEL**<br>TWA: 1000 ppm |

**Engineering controls**

Provide adequate ventilation.

**Personal protective equipment**

**Eye / face protection**

Avoid contact with eyes. tightly fitting safety goggles
Emergency responders should wear full eye and face protection.

| | |
|---|---|
| **Hand protection** | Not normally required when used as directed. Avoid contact with the skin.<br>Emergency responders should wear impermeable gloves. |
| **Skin and body protection** | As required by employer code. |
| **Respiratory protection** | Not normally required if good ventilation is maintained.<br>Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).<br>Emergency responders should wear self-contained breathing apparatus (SCBA) to avoid inhalation of vapours generated by this product during a spill or other clean-up operations. |
| **General hygiene considerations** | Handle in accordance with good industrial hygiene and safety practice.<br>When using do not eat or drink.<br>Washing with soap and water after use is recommended as good hygienic practice to prevent possible eye irritation from hand contact. |

## 9. Physical and Chemical Properties

| | |
|---|---|
| **Appearance** | Misty spray |
| **Color** | Clear |
| **Form** | Aerosol |
| **Odor** | Characteristic |
| **Odor threshold** | Not available |
| **Physical state** | Gas |
| **pH** | 10.8 - 11.8 |
| **Freezing point** | Not available |
| **Boiling point** | Not available |
| **Pour point** | Not available |
| **Evaporation rate** | Not available |
| **Flash point** | 78.08 °F (25.6 °C) |
| **Auto-ignition temperature** | Not available |
| **Flammability limits in air, lower, % by volume** | Not available |
| **Flammability limits in air, upper, % by volume** | Not available |
| **Vapor pressure** | Not available |
| **Vapor density** | Not available |
| **Specific gravity** | 0.882 @ 25°C (Concentrate) |
| **Octanol/water coefficient** | Not available |
| **Solubility (H2O)** | Complete |
| **VOC (Weight %)** | Not available |
| **Viscosity** | Not available |
| **Percent volatile** | Not available |

## 10. Stability and Reactivity

| | |
|---|---|
| **Reactivity** | This product may react with strong oxidizing agents. |
| **Possibility of hazardous reactions** | Hazardous polymerization does not occur. |
| **Chemical stability** | Stable under recommended storage conditions. |
| **Conditions to avoid** | Heat, open flames, static discharge, sparks and other ignition sources.<br>Aerosol containers are unstable at temperatures above 49°C (120.2°F).<br>Do not freeze.<br>Exposure to moisture. |
| **Incompatible materials** | Oxidizers. |
| **Hazardous decomposition products** | May include and are not limited to: Oxides of carbon. |

# 11. Toxicological Information

**Component analysis - LC50**

| Ingredient(s) | LC50 |
|---|---|
| Alkyl (40% C12, 50% C14, 10% C16) dimethyl benzyl ammonium saccharinate | Not available |
| Butane | Not available |
| Ethanol | 31623 ppm rat |
| Propane | Not available |

**Component analysis - Oral LD50**

| Ingredient(s) | LD50 |
|---|---|
| Alkyl (40% C12, 50% C14, 10% C16) dimethyl benzyl ammonium saccharinate | Not available |
| Butane | Not available |
| Ethanol | 3450 mg/kg mouse; 7060 mg/kg rat |
| Propane | Not available |

**Effects of acute exposure**

**Eye** Causes moderate eye irritation.

**Skin** Moderately irritating to the skin.

**Inhalation** None expected during normal conditions of use.
However intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

**Ingestion** Contains denatured ethyl alcohol. May be harmful if swallowed.

**Sensitization** The finished product is not expected to have chronic health effects.

**Chronic effects** The finished product is not expected to have chronic health effects.

**Carcinogenicity** The finished product is not expected to have chronic health effects.

**ACGIH - Threshold Limit Values - Carcinogens**

| | | |
|---|---|---|
| Ethanol | 64-17-5 | A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans |

**Mutagenicity** The finished product is not expected to have chronic health effects.

**Reproductive effects** The finished product is not expected to have chronic health effects.

**Teratogenicity** The finished product is not expected to have chronic health effects.

**Name of Toxicologically Synergistic Products** Not available

# 12. Ecological Information

**Ecotoxicity** Components of this product have been identified as having potential environmental concerns.

**Ecotoxicity - Freshwater Fish - Acute Toxicity Data**

| | | |
|---|---|---|
| Ethanol | 64-17-5 | 96 Hr LC50 Oncorhynchus mykiss: 12.0 - 16.0 mL/L [static]; 96 Hr LC50 Pimephales promelas: >100 mg/L [static]; 96 Hr LC50 Pimephales promelas: 13400 - 15100 mg/L [flow-through] |

**Ecotoxicity - Water Flea - Acute Toxicity Data**

| | | |
|---|---|---|
| Ethanol | 64-17-5 | 48 Hr LC50 Daphnia magna: 9268 - 14221 mg/L; 24 Hr EC50 Daphnia magna: 10800 mg/L; 48 Hr EC50 Daphnia magna: 2 mg/L [Static] |

**Persistence / degradability** Not available

**Bioaccumulation / accumulation** Not available

**Mobility in environmental media** Not available

**Environmental effects** Not available

**Aquatic toxicity** Not available

**Partition coefficient** Not available

**Chemical fate information** Not available

## 13. Disposal Considerations

| | |
|---|---|
| **Disposal instructions** | Dispose in accordance with all applicable regulations.<br>Discard in trash or offer for recycling if available. |
| **Waste from residues / unused products** | Not available |
| **Contaminated packaging** | Not available |

## 14. Transport Information

**U.S. Department of Transportation (DOT)**

UN1950, Aerosols, flammable, Class 2.1 Re-Classed as Limited Quantity

**Transportation of Dangerous Goods (TDG - Canada)**

UN1950, Aerosols, flammable, Class 2.1 Re-Classed as Limited Quantity

**IMDG (Marine Transport)**

UN 1950, Aerosols, flammable, Class 2.1

**IATA/ICAO (Air)**

UN 1950, Aerosols, Flammable, Limited Quantity or

Consumer Commodity, ID 8000 if acceptable to airline.

## 15. Regulatory Information

**Occupational Safety and Health Administration (OSHA)**

| | |
|---|---|
| **29 CFR 1910.1200 hazardous chemical** | Yes |
| **US Federal regulations** | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.<br>Product Registration: Registered with EPA, EPA Reg. No. 777-99 |

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

| | |
|---|---|
| **Hazard categories** | Immediate Hazard - Yes<br>Delayed Hazard - Yes<br>Fire Hazard - Yes<br>Pressure Hazard - Yes<br>Reactivity Hazard - No |
| **Section 302 extremely hazardous substance** | No |
| **Section 311 hazardous chemical** | Yes |
| **Clean Air Act (CAA)** | Not available |
| **Clean Water Act (CWA)** | Not available |

**State regulations** See below

**U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances**

| | | |
|---|---|---|
| Butane | 106-97-8 | Present |

**U.S. - Massachusetts - Right To Know List**

| | | |
|---|---|---|
| Butane | 106-97-8 | Present |
| Ethanol | 64-17-5 | Teratogen |
| Propane | 74-98-6 | Present |

**U.S. - Minnesota - Hazardous Substance List**

| | | |
|---|---|---|
| Butane | 106-97-8 | Present |
| Ethanol | 64-17-5 | Present |
| Propane | 74-98-6 | Simple asphyxiant |

**U.S. - New Jersey - Right to Know Hazardous Substance List**

| | | |
|---|---|---|
| Butane | 106-97-8 | sn 0273 |
| Ethanol | 64-17-5 | sn 0844 |
| Propane | 74-98-6 | sn 1594 |

**U.S. - Pennsylvania - RTK (Right to Know) List**

| | | |
|---|---|---|
| Butane | 106-97-8 | Present |
| Ethanol | 64-17-5 | Present |
| Propane | 74-98-6 | Present |

**U.S. - Rhode Island - Hazardous Substance List**

| | | |
|---|---|---|
| Butane | 106-97-8 | Toxic; Flammable |
| Ethanol | 64-17-5 | Toxic; Flammable |
| Propane | 74-98-6 | Toxic; Flammable |

**Inventory status**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

## 16. Other Information

**Disclaimer** This product should only be used as directed on the label and for the purpose intended. 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.

**Further information** LYSOL® Brand III Disinfectant Spray - Crisp Linen - 6 oz, 12.5 oz, 19 oz, 350g - 0242193 v 1.0

LYSOL® Brand III Disinfectant Spray - "To Go" Crisp Linen - 1 oz, 28 g - 0242193 v 1.0

LYSOL® Brand III Disinfectant Spray - Spring Waterfall - 12.5 oz, 19 oz, 350g - 0258756 v 1.0

LYSOL® Brand III Disinfectant Spray - Crisp Berry - 12.5 oz, 19 oz, 350g - 0175938 v 1.0

LYSOL® Brand III Disinfectant Spray - Early Morning Breeze - 12.5 oz, 19 oz - 0175929 v 1.0

LYSOL® Brand III Disinfectant Spray - Garden Mist - 12.5 oz, 19 oz - 0175932 v 1.0

LYSOL® Brand III Disinfectant Spray - For Baby's Room - 12.5 oz, 19 oz - 01759232 v 1.0

LYSOL® Brand III Disinfectant Spray - Summer Breeze - 12.5 oz, 19 oz - 0175935 v 1.0

LYSOL® Brand III Disinfectant Spray - Citrus Meadows - 12.5 oz, 19 oz - 0175926 v 1.0

LYSOL® Brand III Disinfectant Spray - Vanillia & Blossoms - 12.5 oz, 19 oz - 0175943 v 1.0

LYSOL® Brand III Disinfectant Spray - Jasmine & Rain - 12.5 oz, 19 oz - 0175920 v 1.0

**Issue date** 17-May-2012

| | |
|---|---|
| **Effective date** | 15-Mar-2012 |
| **Prepared by** | Reckitt Benckiser Regulatory Department 800-333-3899 |
| **Other information** | For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document. |

# PURELL® Instant Hand Sanitizer

Version 1.0 SDS Number: 400000000469 Revision Date: 01/31/2017

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : PURELL® Instant Hand Sanitizer

**Manufacturer or supplier's details**

Company name of supplier : GOJO Industries, Inc.

Address : One GOJO Plaza, Suite 500
Akron, Ohio 44311

Telephone : 1 (330) 255-6000

Emergency telephone number : 1-800-424-9300 CHEMTREC

**Recommended use of the chemical and restrictions on use**

Recommended use : Hand Sanitizer

Restrictions on use : This is a personal care or cosmetic product that is safe for consumers and other users under normal and reasonably foreseeable use. Cosmetics and consumer products, specifically defined by regulations around the world, are exempt from the requirement of an SDS for the consumer. While this material is not considered hazardous, this SDS contains valuable information critical to the safe handling and proper use of the product for industrial workplace conditions as well as unusual and unintended exposures such as large spills. This SDS should be retained and available for employees and other users of this product. For specific intended-use guidance, please refer to the information provided on the package or instruction sheet.

Prepared by :

## SECTION 2. HAZARDS IDENTIFICATION

**Emergency Overview**

| | |
|---|---|
| Physical state | liquid |
| Colour | clear, colourless, light yellow |
| Odour | citrus |

**GHS Classification**

Flammable liquids : Category 3

Eye irritation : Category 2A

**GHS label elements**

Hazard pictograms :

Signal word : Warning

Hazard statements : H226 Flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary statements : **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P280 Wear eye protection/ face protection.
**Response:**
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
**Storage:**
P403 + P235 Store in a well-ventilated place. Keep cool.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

**Potential Health Effects**

Primary Routes of Entry : Inhalation
Eye contact
Skin contact

Aggravated Medical Condition : None known.

**Carcinogenicity:**

**IARC** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Hazardous components**

| Chemical name | CAS-No. | Concentration (%) |
|---|---|---|
| Ethyl Alcohol | 64-17-5 | >= 50 - < 70 |

| | | |
|---|---|---|
| Isopropyl Alcohol | 67-63-0 | >= 1 - < 5 |

## SECTION 4. FIRST AID MEASURES

| | | |
|---|---|---|
| General advice | : | In the case of accident or if you feel unwell, seek medical advice immediately.<br>When symptoms persist or in all cases of doubt seek medical advice. |
| If inhaled | : | If inhaled, remove to fresh air.<br>If symptoms persist, call a physician. |
| In case of skin contact | : | Wash with water and soap as a precaution.<br>Get medical attention if irritation develops and persists. |
| In case of eye contact | : | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.<br>If easy to do, remove contact lens, if worn.<br>Seek medical advice. |
| If swallowed | : | If swallowed, DO NOT induce vomiting.<br>Rinse mouth with water.<br>Obtain medical attention. |
| Most important symptoms and effects, both acute and delayed | : | Causes serious eye irritation. |
| Protection of first-aiders | : | First Aid responders should pay attention to self-protection and use the recommended protective clothing |

## SECTION 5. FIREFIGHTING MEASURES

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
| Unsuitable extinguishing media | : | High volume water jet |
| Specific hazards during firefighting | : | Do not use a solid water stream as it may scatter and spread fire.<br>Flash back possible over considerable distance.<br>May form explosive mixtures in air.<br>Carbon oxides |
| Hazardous combustion products | : | Carbon oxides |
| Specific extinguishing methods | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.<br>Use water spray to cool unopened containers. |
| Further information | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains. |

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Remove all sources of ignition.
Evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Material can create slippery conditions.

Environmental precautions : Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Non-sparking tools should be used.
Soak up with inert absorbent material.
Suppress (knock down) gases/vapours/mists with a water spray jet.
Keep in suitable, closed containers for disposal.
Clean contaminated floors and objects thoroughly while observing environmental regulations.

## SECTION 7. HANDLING AND STORAGE

Advice on safe handling : For personal protection see section 8.
Keep away from heat.
Use with local exhaust ventilation.
Avoid contact with eyes.

Conditions for safe storage : Take measures to prevent the build up of electrostatic charge.
Keep in properly labelled containers.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Store in accordance with the particular national regulations.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| Ethyl Alcohol | 64-17-5 | TWA | 1,000 ppm<br>1,880 mg/m3 | CA AB OEL |
| | | STEL | 1,000 ppm | CA BC OEL |

| | | | | |
|---|---|---|---|---|
| | | TWAEV | 1,000 ppm<br>1,880 mg/m3 | CA QC OEL |
| | | STEL | 1,000 ppm | ACGIH |
| Isopropyl Alcohol | 67-63-0 | TWA | 200 ppm<br>492 mg/m3 | CA AB OEL |
| | | STEL | 400 ppm<br>984 mg/m3 | CA AB OEL |
| | | TWA | 200 ppm | CA BC OEL |
| | | STEL | 400 ppm | CA BC OEL |
| | | TWAEV | 400 ppm<br>983 mg/m3 | CA QC OEL |
| | | STEV | 500 ppm<br>1,230 mg/m3 | CA QC OEL |
| | | TWA | 200 ppm | ACGIH |
| | | STEL | 400 ppm | ACGIH |

**Biological occupational exposure limits**

| Components | CAS-No. | Control parameters | Biological specimen | Sampling time | Permissible concentration | Basis |
|---|---|---|---|---|---|---|
| Isopropyl Alcohol | 67-63-0 | Acetone | Urine | End of shift at end of workweek | 40 mg/l | ACGIH BEI |

**Personal protective equipment**

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection
Remarks : No special protective equipment required.

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

Skin and body protection : No special measures necessary provided product is used correctly.

Protective measures : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Ensure that eye flushing systems and safety showers are located close to the working place.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Avoid contact with eyes.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : clear, colourless, light yellow

| | | |
|---|---|---|
| Odour | : | citrus |
| Odour Threshold | : | No data available |
| pH | : | 6.0 - 9.2, (20 °C) |
| Melting point/freezing point | : | No data available |
| Initial boiling point and boiling range | : | No data available |
| Flash point | : | 25.00 °C |
| Evaporation rate | : | No data available |
| Flammability (solid, gas) | : | Not applicable |
| Upper explosion limit | : | No data available |
| Lower explosion limit | : | No data available |
| Vapour pressure | : | No data available |
| Relative vapour density | : | No data available |
| Density | : | 0.8933 g/cm3 |
| Solubility(ies) | | |
| Water solubility | : | soluble |
| Partition coefficient: n-octanol/water | : | Not applicable |
| Auto-ignition temperature | : | No data available |
| Thermal decomposition | : | The substance or mixture is not classified self-reactive. |
| Viscosity | | |
| Viscosity, kinematic | : | 1000 - 35000 mm2/s (20 °C) |
| Explosive properties | : | Not explosive |
| Oxidizing properties | : | The substance or mixture is not classified as oxidizing. |

## SECTION 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Reactivity | : | Not classified as a reactivity hazard. |
| Chemical stability | : | Stable under normal conditions. |
| Possibility of hazardous reactions | : | Vapours may form explosive mixture with air. |
| Conditions to avoid | : | Heat, flames and sparks. |

| | | |
|---|---|---|
| Incompatible materials | : | Strong oxidizing agents<br>Flammable solids<br>Self-reactive substances and mixtures<br>Water-reactive substances |

## SECTION 11. TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| Information on likely routes of exposure | : | Inhalation<br>Eye contact<br>Skin contact |

**Acute toxicity**

Not classified based on available information.

**Components:**

**Ethyl Alcohol:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): > 5,000 mg/kg |
| Acute inhalation toxicity | : | LC50 (Rat): 124.7 mg/l<br>Exposure time: 4 h<br>Test atmosphere: vapour |

**Isopropyl Alcohol:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): > 5,000 mg/kg |
| Acute inhalation toxicity | : | LC50 (Rat): 72.6 mg/l<br>Exposure time: 4 h<br>Test atmosphere: vapour |
| Acute dermal toxicity | : | LD50 (Rat): > 5,000 mg/kg |

**Skin corrosion/irritation**

Not classified based on available information.

**Components:**

**Ethyl Alcohol:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

**Isopropyl Alcohol:**
Species: Rabbit
Result: No skin irritation

**Serious eye damage/eye irritation**

Causes serious eye irritation.

**Components:**

**Ethyl Alcohol:**
Species: Rabbit
Result: Irritation to eyes, reversing within 21 days
Method: OECD Test Guideline 405

**Isopropyl Alcohol:**
Species: Rabbit
Result: Irritation to eyes, reversing within 21 days

**Respiratory or skin sensitisation**

Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

**Components:**

**Ethyl Alcohol:**
Test Type: Local lymph node assay (LLNA)
Exposure routes: Skin contact
Species: Mouse
Result: negative

**Isopropyl Alcohol:**
Test Type: Buehler Test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

**Germ cell mutagenicity**

Not classified based on available information.

**Components:**

**Ethyl Alcohol:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: In vitro mammalian cell gene mutation test<br>Result: negative |
| Genotoxicity in vivo | : | Test Type: Rodent dominant lethal test (germ cell) (in vivo)<br>Test species: Mouse<br>Application Route: Ingestion<br>Result: negative |

**Isopropyl Alcohol:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Result: negative |
| Genotoxicity in vivo | : | Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)<br>Test species: Mouse<br>Application Route: Intraperitoneal injection<br>Result: negative |

**Carcinogenicity**

Not classified based on available information.

**Components:**

**Isopropyl Alcohol:**
Species: Rat
Application Route: inhalation (vapour)
Exposure time: 104 weeks
Method: OECD Test Guideline 451
Result: negative

**Reproductive toxicity**

Not classified based on available information.

**Components:**

**Ethyl Alcohol:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 416
Result: negative

**Isopropyl Alcohol:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

**STOT - single exposure**

Not classified based on available information.

**Components:**

**Isopropyl Alcohol:**

Assessment: May cause drowsiness or dizziness.

**STOT - repeated exposure**

Not classified based on available information.

**Repeated dose toxicity**

**Components:**

**Ethyl Alcohol:**

Species: Rat
NOAEL: 2,400 mg/kg
Application Route: Ingestion
Exposure time: 2 y

**Isopropyl Alcohol:**

Species: Rat
NOAEL: 5000 ppm
Application Route: inhalation (vapour)
Exposure time: 104 w
Method: OECD Test Guideline 413

**Aspiration toxicity**

Not classified based on available information.

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

**Components:**

**Ethyl Alcohol:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l<br>Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): > 1,000 mg/l<br>Exposure time: 48 h |
| Toxicity to algae | : | EC50 (Chlorella vulgaris (Fresh water algae)): 275 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201 |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC (Daphnia magna (Water flea)): 9.6 mg/l<br>Exposure time: 9 d |
| Toxicity to bacteria | : | EC50 (Photobacterium phosphoreum): 32.1 mg/l<br>Exposure time: 0.25 h |

**Isopropyl Alcohol:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Pimephales promelas (fathead minnow)): 10,000 mg/l<br>Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): > 10,000 mg/l<br>Exposure time: 24 h |
| Toxicity to bacteria | : | EC50 (Pseudomonas putida): > 1,050 mg/l<br>Exposure time: 16 h |

### Persistence and degradability

**Components:**

**Ethyl Alcohol:**

| | | |
|---|---|---|
| Biodegradability | : | Result: Readily biodegradable.<br>Biodegradation: 84 %<br>Exposure time: 20 d |

**Isopropyl Alcohol:**

| | | |
|---|---|---|
| Biodegradability | : | Result: rapidly degradable |

### Bioaccumulative potential

**Components:**

**Ethyl Alcohol:**

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: -0.35 |

**Isopropyl Alcohol:**

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: 0.05 |

**Mobility in soil**

No data available

**Other adverse effects**

No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | Dispose of in accordance with local regulations. |
| Contaminated packaging | : | Dispose of as unused product.<br>Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## SECTION 14. TRANSPORT INFORMATION

**International Regulation**

**IATA-DGR**

| | | |
|---|---|---|
| UN/ID No. | : | UN 1987 |
| Proper shipping name | : | Alcohols, n.o.s.<br>(Ethanol, Propan-2-ol) |
| Class | : | 3 |
| Packing group | : | III |
| Packing instruction (cargo aircraft) | : | 366 |
| Packing instruction (passenger aircraft) | : | 355 |

**IMDG-Code**

| | | |
|---|---|---|
| UN number | : | UN 1987 |
| Proper shipping name | : | ALCOHOLS, N.O.S.<br>(Ethanol, Propan-2-ol) |
| Class | : | 3 |
| Packing group | : | III |
| Labels | : | 3 |
| EmS Code | : | F-E, S-D |
| Marine pollutant | : | no |

**National Regulations**

**TDG**

| | | |
|---|---|---|
| UN number | : | UN 1987 |
| Proper shipping name | : | ALCOHOLS, N.O.S.<br>(Ethanol, Propan-2-ol) |
| Class | : | 3 |
| Packing group | : | III |
| Labels | : | 3 |
| ERG Code | : | 127 |
| Marine pollutant | : | no |

## SECTION 15. REGULATORY INFORMATION

**WHMIS Classification** : B2: Flammable liquid
D2B: Toxic Material Causing Other Toxic Effects

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

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

| | | |
|---|---|---|
| TSCA | : | On TSCA Inventory |
| AICS | : | On the inventory, or in compliance with the inventory |
| DSL | : | On the inventory, or in compliance with the inventory |
| 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 |
| NZIoC | : | On the inventory, or in compliance with the inventory |

**Inventories**

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

## SECTION 16. OTHER INFORMATION

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.

## SECTION 1. IDENTIFICATION

| | | |
|---|---|---|
| Product name | : | DIESEL FUEL |
| Synonyms | : | Seasonal Diesel, #2 Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, OSX, D50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend, B1, B2, B5, Diesel Low Cloud (LC), Marine Gas Oil, Marine Gas Oil Dyed. |
| Product code | : | 103136, 103135, 103134, 103133, 103132, 103131, 101799, 102907, 102762, 102763, 102755, 102302, 102744, 101801, 100678, 100677, 101802, 100107, 100668, 100658, 100911, 100663, 100652, 100460, 100065, 101796, 101793, 101795, 101792, 101794, 101791, 100768, 100643, 100642, 100103, 101798, 101800, 101797, 101788, 101789, 101787, 102531, 100734, 100733, 100640, 100997, 100995, 100732, 100731, 100994 |
| Manufacturer or supplier's details | | Petro-Canada<br>P.O. Box 2844, 150 - 6th Avenue South-West<br>Calgary Alberta T2P 3E3<br>Canada |
| Emergency telephone number | | CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887;<br>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. |
| Prepared by | : | Product Safety: +1 905-804-4752 |

## SECTION 2. HAZARDS IDENTIFICATION

**Emergency Overview**

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

**GHS Classification**

Flammable liquids : 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 : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Harmful if inhaled.
May cause drowsiness or dizziness.
Suspected of causing cancer.
May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

Precautionary statements : **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
**Response:**
IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Do NOT induce vomiting.

If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
**Storage:**
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
**Disposal:**
Dispose of contents/ container to an approved waste disposal plant.

**Potential Health Effects**

Primary Routes of Entry : Eye contact
Ingestion
Inhalation
Skin contact

Aggravated Medical Condition : None known.

**Other hazards**

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

**Hazardous components**

| Chemical name | CAS-No. | Concentration |
|---|---|---|
| Kerosine (petroleum), hydrodesulfurized; Kerosine -unspecified | 64742-81-0 | 70 - 100 % |
| Kerosine (petroleum); Straight run kerosine | 8008-20-6 | |
| Fuels, diesel; Gasoil -unspecified | 68334-30-5 | |
| Alkanes, C10-20-branched and linear | 928771-01-1 | 0 - 30 % |
| 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.<br>Obtain medical attention. |
| If swallowed | : | Rinse mouth with water.<br>DO NOT induce vomiting unless directed to do so by a physician or poison control center.<br>Never give anything by mouth to an unconscious person.<br>Seek medical advice. |
| Most important symptoms and effects, both acute and delayed | : | Harmful if inhaled.<br>Respiratory, skin and eye irritation; nausea; cancer. |
| Notes to physician | : | Treat symptomatically.<br>For specialist advice physicians should contact the Poisons Information Service. |

## SECTION 5. FIREFIGHTING MEASURES

| | | |
|---|---|---|
| Suitable extinguishing media | : | Dry chemical<br>Carbon dioxide (CO2)<br>Water fog.<br>Foam |
| Unsuitable extinguishing media | : | Do NOT use water jet. |
| Specific hazards during firefighting | : | 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 for firefighters | : | Wear self-contained breathing apparatus for firefighting if necessary. |

## SECTION 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | For personal protection see section 8.<br>Ensure adequate ventilation.<br>Evacuate personnel to safe areas.<br>Material can create slippery conditions. |
| Environmental precautions | : | If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up | : | Prevent further leakage or spillage if safe to do so.<br>Remove all sources of ignition.<br>Soak up with inert absorbent material.<br>Non-sparking tools should be used.<br>Ensure adequate ventilation.<br>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.<br>Use only with adequate ventilation.<br>In case of insufficient ventilation, wear suitable respiratory equipment.<br>Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.<br>Avoid contact with skin, eyes and clothing.<br>Do not ingest.<br>Keep away from heat and sources of ignition.<br>Keep container closed when not in use. |
| Conditions for safe storage | : | Store in original container.<br>Containers which are opened must be carefully resealed and kept upright to prevent leakage.<br>Keep in a dry, cool and well-ventilated place.<br>Keep in properly labelled containers.<br>To maintain product quality, do not store in heat or direct sunlight.<br>Ensure the storage containers are grounded/bonded. |

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| Kerosine (petroleum), hydrodesulfurized; Kerosine - unspecified | 64742-81-0 | TWA | 200 mg/m3 (As total hydrocarbon vapour) | ACGIH |
| | | TWA | 200 mg/m3 (total hydrocarbon vapor) | CA AB OEL |
| | | TWA | 525 mg/m3 | CA ON OEL |
| | | TWA | 200 mg/m3 (As total hydrocarbon vapour) | ACGIH |
| | | TWA | 200 mg/m3 (total hydrocarbon vapor) | ACGIH |
| Kerosine (petroleum); Straight run kerosine | 8008-20-6 | TWA | 200 mg/m3 (total hydrocarbon vapor) | CA BC OEL |
| | | TWA | 200 mg/m3 (total hydrocarbon vapor) | CA AB OEL |
| | | TWA | 200 mg/m3 (total hydrocarbon vapor) | ACGIH |
| Fuels, diesel; Gasoil - unspecified | 68334-30-5 | TWA | 100 mg/m3 (total hydrocarbons) | CA AB OEL |
| | | TWA (Vapour and | 100 mg/m3 (total hydrocar- | CA BC OEL |

| | | | | |
|---|---|---|---|---|
| | | inhalable aerosols) | bons) | |
| | | TWA (Inhalable fraction and vapor) | 100 mg/m3 (total hydrocarbons) | 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 : 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. |
| Colour | : | Clear to yellow (This product may be dyed red for taxation purposes) |
| Odour | : | Mild petroleum oil like. |
| Odour Threshold | : | No data available |
| pH | : | No data available |
| Melting point | : | No data available |
| Boiling point/boiling range | : | 150 - 371 °C (302 - 700 °F) |
| Decomposition temperature | | No data available |
| Flash point | : | > 40 °C (104 °F)<br>Method: closed cup |
| Auto-Ignition Temperature | : | 225 °C (437 °F) |
| Evaporation rate | : | No data available |
| Flammability | : | 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. |
| Upper explosion limit | : | 6 %(V) |
| Lower explosion limit | : | 0.7 %(V) |
| Vapour pressure | : | 7.5 mmHg (20 °C / 68 °F) |
| Relative vapour density | : | 4.5 |
| Relative density | : | 0.8 - 0.88 |
| Solubility(ies) | | |
| Water solubility | : | insoluble |
| Partition coefficient: n-octanol/water | : | No data available |
| Viscosity | | |
| Viscosity, kinematic | : | 1.3 - 4.1 cSt (40 °C / 104 °F) |

## SECTION 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Reactivity | : | Stable at normal ambient temperature and pressure. |
| Chemical stability | : | Stable under normal conditions. |
| Possibility of hazardous reactions | : | Hazardous polymerisation 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: No data available |
| Acute inhalation toxicity | : | Acute toxicity estimate: 1.2 mg/l<br>Exposure time: 4 h<br>Test atmosphere: dust/mist<br>Method: Calculation method |
| Acute dermal toxicity | : | Remarks: No data available |

**Components:**

**Kerosine (petroleum), hydrodesulfurized; Kerosine -unspecified:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): > 5,000 mg/kg, |
| Acute inhalation toxicity | : | LC50 (Rat): > 5.2 mg/l<br>Exposure time: 4 hrs<br>Test atmosphere: dust/mist |
| 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<br>Exposure time: 4 h<br>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<br>Exposure time: 4 h |

Test atmosphere: vapour

Acute dermal toxicity : LD50 (Mouse): 24,500 mg/kg,

**Skin corrosion/irritation**

**Product:**

Remarks: Causes skin irritation.

**Serious eye damage/eye irritation**

**Product:**

Remarks: No data available

**Respiratory or skin sensitisation**

**Product:**

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

**Germ cell mutagenicity**

**Product:**

| | |
|---|---|
| Genotoxicity in vitro | Remarks: No data available |
| Genotoxicity in vivo | Remarks: No data available |

**Carcinogenicity**

**Product:**

| | |
|---|---|
| Carcinogenicity - Assessment | Suspected of causing cancer. |

**Reproductive toxicity**

**Product:**

| | |
|---|---|
| Effects on fertility | Remarks: Based on available data, the classification criteria are not met. |

**STOT - single exposure**

**Product:**

Remarks: May cause drowsiness or dizziness.

**STOT - repeated exposure**

**Product:**

Remarks: May cause damage to organs through prolonged or repeated exposure.

No data available

**Aspiration toxicity**

**Product:**

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 | : | Remarks: No data available |
| Toxicity to bacteria | : | Remarks: No data available |

**Persistence and degradability**

**Product:**

| | | |
|---|---|---|
| Biodegradability | : | Remarks: No data available |

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects**

No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | The product should not be allowed to enter drains, water courses or the soil.<br>Offer surplus and non-recyclable solutions to a licensed disposal company.<br>Waste must be classified and labelled prior to recycling or disposal.<br>Send to a licensed waste management company.<br>Dispose of as hazardous waste in compliance with local and national regulations.<br>Dispose of product residue in accordance with the instructions of the person responsible for waste disposal. |

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

**IATA-DGR**

| | | |
|---|---|---|
| UN/ID No. | : | UN 1202 |
| Proper shipping name | : | Diesel fuel |
| Class | : | 3 |
| Packing group | : | III |
| Labels | : | Class 3 - Flammable Liquid |
| 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 | : | no |

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

### National Regulations

**TDG**

| | | |
|---|---|---|
| UN number | : | UN 1202 |
| Proper shipping name | : | DIESEL FUEL |
| Class | : | 3 |
| Packing group | : | III |
| Labels | : | 3 |
| ERG Code | : | 128 |
| Marine pollutant | : | no |

## SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR.

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

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

## SECTION 16. OTHER INFORMATION

| | | |
|---|---|---|
| For Copy of SDS | : | Internet: www.petro-canada.ca/msds<br>Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228<br>For Product Safety Information: 1 905-804-4752 |

Prepared by : Product Safety: +1 905-804-4752

Revision Date : 2020/03/09

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.

## SECTION 1. IDENTIFICATION

| | | |
|---|---|---|
| Product name | : | GASOLINE, UNLEADED |
| Synonyms | : | TN-PE-TM15-X00-1499; Regular, Unleaded Gasoline (US Grade), Mid-Grade, Plus, Super, WinterGas, SummerGas, Supreme, SuperClean, SuperClean WinterGas, Regular-Clean, PlusClean, Premium, marked or dyed gasoline, TQRUL, transitional quality regular unleaded, BOB, Blend-stock for Oxygenate Blending, Conventional Gasoline, RUL, MUL, SUL, PUL. |
| Product code | : | 100127, 100126, 101823, 100507, 101811, 101814, 100141, 101813, 101810, 101812, 100063, 101822, 100138, 101821, 100064, 101820, 101819, 100506, 101818, 101816, 101817, 100488 |
| Manufacturer or supplier's details | | Petro-Canada<br>P.O. Box 2844, 150 - 6th Avenue South-West<br>Calgary Alberta T2P 3E3<br>Canada |
| Emergency telephone number | | Suncor Energy: +1 403-296-3000;<br>Canutec Transportation: 1-888-226-8832 (toll-free) or 613-996-6666;<br>Poison Control Centre: Consult local telephone directory for emergency number(s). |

**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 recreational vehicles. |
| Prepared by | : | Product Safety: +1 905-804-4752 |

## SECTION 2. HAZARDS IDENTIFICATION

**Emergency Overview**

| | |
|---|---|
| Appearance | Clear liquid. |
| Colour | Clear to slightly yellow or green, undyed liquid. May be dyed red for taxation purposes. |
| Odour | Gasoline |

**GHS Classification**

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 : Extremely flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause drowsiness or dizziness.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
Causes damage to organs through prolonged or repeated exposure.

Precautionary statements : **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
**Response:**
IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
**Storage:**
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
**Disposal:**
Dispose of contents/ container to an approved waste disposal plant.

**Potential Health Effects**

Primary Routes of Entry : Eye contact
Ingestion
Inhalation
Skin contact

Aggravated Medical Condition : None known.

**Other hazards**

None known.

| | | |
|---|---|---|
| **IARC** | Group 1: Carcinogenic to humans | |
| | Benzene | 71-43-2 |
| **ACGIH** | Confirmed human carcinogen | |
| | Benzene | 71-43-2 |
| | Confirmed animal carcinogen with unknown relevance to humans | |
| | Gasoline | 86290-81-5 |
| | Ethanol | 64-17-5 |

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

**Hazardous components**

| Chemical name | CAS-No. | Concentration |
|---|---|---|
| Gasoline; Low boiling point naphtha -unspecified | 86290-81-5 | 95 - 100 % |
| toluene | 108-88-3 | 1 - 40 % |
| benzene | 71-43-2 | 0.5 - 1.5 % |
| ethanol | 64-17-5 | 0.1 - 0.3 % |

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 : Inhalation may cause central nervous system effects.
Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Chronic exposure to benzene may result in increased risk of leukemia and other blood disorders.

Notes to physician : Treat symptomatically.
Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## SECTION 5. FIREFIGHTING MEASURES

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

| | | |
|---|---|---|
| Unsuitable extinguishing media | : | Do NOT use water jet. |
| Specific hazards during fire-fighting | : | Cool closed containers exposed to fire with water spray. |
| Hazardous combustion 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 for firefighters | : | Wear self-contained breathing apparatus and full protective wear.<br>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.<br>Ensure adequate ventilation.<br>Evacuate personnel to safe areas.<br>Material can create slippery conditions. |
| Environmental precautions | : | If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up | : | Prevent further leakage or spillage if safe to do so.<br>Remove all sources of ignition.<br>Soak up with inert absorbent material.<br>Non-sparking tools should be used.<br>Ensure adequate ventilation.<br>Contact the proper local authorities. |

## SECTION 7. HANDLING AND STORAGE

| | | |
|---|---|---|
| Advice on safe handling | : | For personal protection see section 8.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Use only with adequate ventilation.<br>In case of insufficient ventilation, wear suitable respiratory equipment.<br>Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.<br>Avoid contact with skin, eyes and clothing.<br>Do not ingest.<br>Keep away from heat and sources of ignition.<br>Keep container closed when not in use. |
| Conditions for safe storage | : | Store in original container.<br>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 labelled containers.
To maintain product quality, do not store in heat or direct sunlight.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| toluene | 108-88-3 | TWA | 50 ppm<br>188 mg/m3 | CA AB OEL |
| | | TWA | 20 ppm | CA BC OEL |
| | | TWAEV | 50 ppm<br>188 mg/m3 | CA QC OEL |
| | | TWA | 20 ppm | ACGIH |
| benzene | 71-43-2 | TWA | 0.5 ppm<br>1.6 mg/m3 | CA AB OEL |
| | | STEL | 2.5 ppm<br>8 mg/m3 | CA AB OEL |
| | | 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 | 1 ppm<br>3 mg/m3 | CA QC OEL |
| | | STEV | 5 ppm<br>15.5 mg/m3 | CA QC OEL |
| | | TWA | 0.5 ppm | ACGIH |
| | | STEL | 2.5 ppm | ACGIH |
| 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 | TWA | 1,000 ppm<br>1,880 mg/m3 | CA AB OEL |
| | | STEL | 1,000 ppm | CA BC OEL |
| | | TWAEV | 1,000 ppm<br>1,880 mg/m3 | CA QC OEL |
| | | STEL | 1,000 ppm | ACGIH |

**Biological occupational exposure limits**

| Components | CAS-No. | Control parameters | Biological specimen | Sampling time | Permissible concentration | Basis |
|---|---|---|---|---|---|---|
| Toluene | 108-88-3 | Toluene | In blood | Prior to last shift of work- | 0.02 mg/l | ACGIH BEI |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | week | | |
| | | Toluene | Urine | End of shift (As soon as possible after exposure ceases) | 0.03 mg/l | ACGIH BEI |

**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.<br>Wash face, hands and any exposed skin thoroughly after handling. |

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | Clear liquid. |
| Colour | : | Clear to slightly yellow or green, undyed liquid. May be dyed red for taxation purposes. |
| Odour | : | Gasoline |
| Odour Threshold | : | No data available |
| pH | : | No data available |
| Melting point | : | No data available |
| Boiling point/boiling range | : | 25 - 225 °C (77 - 437 °F) |
| Decomposition temperature | | No data available |
| Flash point | : | -50 - -38 °C (-58 - -36 °F)<br>Method: Tagliabue. |
| Auto-Ignition Temperature | : | 257 °C (495 °F) |
| Evaporation rate | : | No data available |
| Flammability | : | Extremely flammable in presence of open flames, sparks, shocks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces. |
| Upper explosion limit | : | 7.6 %(V) |
| Lower explosion limit | : | 1.3 %(V) |
| Vapour pressure | : | < 802.5 mmHg (20 °C / 68 °F) |
| Relative vapour density | : | 3 |
| Relative density | : | 0.685 - 0.8 |
| Solubility(ies) | | |
| Water solubility | : | insoluble |
| Partition coefficient: n-octanol/water | : | 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 polymerisation 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 | : | 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:**

**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): 7585 ppm |

Exposure time: 4 h
Test atmosphere: dust/mist

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: vapour

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: vapour

**Skin corrosion/irritation**

**Product:**
Remarks: Causes skin irritation.

**Serious eye damage/eye irritation**

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

**Respiratory or skin sensitisation**

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

**Germ cell mutagenicity**

**Product:**

| | |
|---|---|
| Germ cell mutagenicity- Assessment | May cause genetic defects. |

**Carcinogenicity**

**Product:**

| | |
|---|---|
| Carcinogenicity - Assessment | May cause cancer. |

**Reproductive toxicity**

**Product:**

| | |
|---|---|
| Reproductive toxicity - | Suspected of damaging fertility or the unborn child. |

Assessment

**STOT - single exposure**

**Product:**

Remarks: May cause drowsiness or dizziness.

**STOT - repeated exposure**

**Product:**

Remarks: Causes damage to organs through prolonged or repeated exposure.

No data available

**Aspiration toxicity**

**Product:**

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 | : | Remarks: No data available |
| Toxicity to bacteria | : | Remarks: No data available |

**Persistence and degradability**

**Product:**

| | | |
|---|---|---|
| Biodegradability | : | Remarks: No data available |

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects**

No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods**

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled 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.

## SECTION 14. TRANSPORT INFORMATION

**International Regulations**

**IATA-DGR**

| | | |
|---|---|---|
| UN/ID No. | : | UN 1203 |
| Proper shipping name | : | Gasoline |
| Class | : | 3 |
| Packing group | : | II |
| Labels | : | Class 3 - Flammable Liquid |
| 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 | : | no |

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

**National Regulations**

**TDG**

| | | |
|---|---|---|
| UN number | : | UN 1203 |
| Proper shipping name | : | GASOLINE |
| Class | : | 3 |
| Packing group | : | II |
| Labels | : | 3 |
| ERG Code | : | 128 |
| Marine pollutant | : | no |

## SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR.

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

| | |
|---|---|
| **DSL** | On the inventory, or in compliance with the inventory |

## SECTION 16. OTHER INFORMATION

| | | |
|---|---|---|
| For Copy of SDS | : | Internet: www.petro-canada.ca/msds<br>Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228<br>For Product Safety Information: 1 905-804-4752 |
| Prepared by | : | Product Safety: +1 905-804-4752 |
| Revision Date | : | 2019/06/14 |

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.

# SAFETY DATA SHEET

# PROPANE

**000003000646**



## SECTION 1. IDENTIFICATION

| | | |
|---|---|---|
| Product name | : | PROPANE |
| Synonyms | : | 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. |
| Product code | : | 100139 |
| Manufacturer or supplier's details | | Petro-Canada<br>P.O. Box 2844, 150 - 6th Avenue South-West<br>Calgary Alberta T2P 3E3<br>Canada |
| Emergency telephone number | | CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887;<br>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. |
| Prepared by | : | Product Safety: +1 905-804-4752 |

## SECTION 2. HAZARDS IDENTIFICATION

**Emergency Overview**

| | |
|---|---|
| Appearance | Gas at room temperature; liquid when stored under pressure., compressed liquefied gas |
| Colour | colourless |
| Odour | Propane is an odourless gas. Odourized propane will contain up to 30 g Ethyl Mercaptan per 1000 L of propane. |

**GHS Classification**

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

**GHS label elements**

Hazard pictograms :

Signal word : Danger

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

Precautionary statements : **Prevention:**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
**Response:**
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
In case of leakage, eliminate all ignition sources.
**Storage:**
Protect from sunlight. Store in a well-ventilated place.

**Potential Health Effects**

Primary Routes of Entry : Eye contact
Inhalation
Skin contact

Aggravated Medical Condition : None known.

**Other hazards**

None known.

**IARC** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**ACGIH** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

**Hazardous components**

| Chemical name | CAS-No. | Concentration |
|---|---|---|
| propane | 74-98-6 | 90 - 100 % |
| propene | 115-07-1 | 1 - 5 % |
| butane | 106-97-8 | 1 - 2.5 % |

| | | |
|---|---|---|
| ethane | 74-84-0 | 1 - 1.5 % |
| methane | 74-82-8 | 0.1 - 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.

Notes to physician : Treat symptomatically.
Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## SECTION 5. FIREFIGHTING 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 firefighting : 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 firefighters | : | Wear self-contained breathing apparatus and full protective wear.<br>Wear a positive-pressure supplied-air respirator with full face-piece. |

## SECTION 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Ensure adequate ventilation.<br>Evacuate personnel to safe areas.<br>In case of inadequate ventilation wear respiratory protection.<br>Remove all sources of ignition. |
| 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.<br>Ensure adequate ventilation.<br>Use explosion-proof ventilation equipment.<br>Non-sparking tools should be used.<br>Contact the proper local authorities. |

## SECTION 7. HANDLING AND STORAGE

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

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components 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 |
| | | TWA | 1,000 ppm | CA BC OEL |
| | | TWAEV | 1,000 ppm<br>1,800 mg/m3 | CA QC OEL |
| propene | 115-07-1 | TWA | 500 ppm<br>860 mg/m3 | CA AB OEL |
| | | TWA | 500 ppm | CA BC OEL |
| | | TWA | 500 ppm | ACGIH |
| butane | 106-97-8 | TWA | 1,000 ppm | CA AB OEL |
| | | TWA | 600 ppm | CA BC OEL |
| | | STEL | 750 ppm | CA BC OEL |
| | | TWAEV | 800 ppm<br>1,900 mg/m3 | CA QC OEL |
| | | STEL | 1,000 ppm | ACGIH |
| ethane | 74-84-0 | TWA | 1,000 ppm | CA AB OEL |
| | | TWA | 1,000 ppm | CA BC OEL |

**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 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.<br>Wear suitable protective equipment. |
| Hygiene measures | : | Remove and wash contaminated clothing and gloves, including the inside, before re-use.<br>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 |
| Colour | : | colourless |
| Odour | : | Propane is an odourless gas. Odourized propane will contain up to 30 g Ethyl Mercaptan per 1000 L of propane. |
| Odour Threshold | : | No data available |
| pH | : | No data available |
| Melting point/freezing point | : | No data available |
| Boiling point/boiling range | : | -42 °C (-44 °F) |
| Decomposition temperature | | No data available |
| Flash point | : | -104 °C (-155 °F)<br>Method: closed cup |
| Auto-Ignition Temperature | : | 450 °C (842 °F) |
| Evaporation rate | : | No data available |
| Flammability | : | Extremely 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. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces. |
| Upper explosion limit | : | 9.5 %(V) |
| Lower explosion limit | : | 2.1 %(V) |
| Vapour pressure | : | 10,763 mmHg (38 °C / 100 °F) |
| Relative vapour density | : | 1.56 |

| | | |
|---|---|---|
| Relative density | : | No data available |
| Solubility(ies) | | |
| Water solubility | : | No data available |
| Partition coefficient: n-octanol/water | : | 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 polymerisation 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

**Skin corrosion/irritation**

**Product:**

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

**Serious eye damage/eye irritation**

**Product:**

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

**Respiratory or skin sensitisation**

**Product:**

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

**Germ cell mutagenicity**

**Product:**

| | |
|---|---|
| Germ cell mutagenicity- Assessment | Based on available data, the classification criteria are not met. |

**Carcinogenicity**

**Product:**

| | |
|---|---|
| Carcinogenicity - Assessment | Based on available data, the classification criteria are not met. |

**Reproductive toxicity**

**Product:**

| | |
|---|---|
| Reproductive toxicity - Assessment | Based on available data, the classification criteria are not met. |

**STOT - single exposure**

**Product:**

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

**STOT - repeated exposure**

**Product:**

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

No data available

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

**Product:**

Toxicity to fish : Remarks: No data available

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

Toxicity to algae : Remarks: No data available

Toxicity to bacteria : Remarks: No data available

### Persistence and degradability

**Product:**

Biodegradability : Remarks: No data available

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### Other adverse effects

No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled 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.

## 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 | : | Class 2 - Gases: Flammable (Division 2.1) |
| 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**

**National Regulations**

**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 |

## SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR.

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

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

## SECTION 16. OTHER INFORMATION

| | | |
|---|---|---|
| For Copy of SDS | : | Internet: www.petro-canada.ca/msds<br>Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228<br>For Product Safety Information: 1 905-804-4752 |
| Prepared by | : | Product Safety: +1 905-804-4752 |
| Revision Date | : | 2020/01/27 |

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

# Material Safety Data Sheet

TWO CYCLE MOTOR OIL

## 1 . Product and company identification

**Product name** : TWO CYCLE MOTOR OIL

**Code** : TWOCYC

**Material uses** : A low ash 2-cycle engine oil designed to lubricate conventional pre-mixed fuel/oil as well as oil injection lubricated engines powering air-cooled two-stroke cycle engines.

**Manufacturer** : Petro-Canada Lubricants Inc.
2310 Lakeshore Road West
Mississauga, Ontario
Canada L5J 1K2

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

## 2 . Hazards identification

**Physical state** : Viscous liquid.

**Odour** : Mild petroleum oil like.

**WHMIS (Canada)** : Not controlled under WHMIS (Canada).

**OSHA/HCS status** : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

**Emergency overview** : No specific hazard.

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

**Potential acute health effects**

**Inhalation** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

**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.

**Carcinogenicity** : Not listed as carcinogenic by OSHA, NTP or IARC.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

**Medical conditions aggravated by over-exposure** : Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated skin exposure can produce local skin destruction or dermatitis.

**See toxicological information (Section 11)**

## 3 . Composition/information on ingredients

| Name | CAS number | % |
|---|---|---|
| Mixture of severely hydrotreated and hydrocracked and/or solvent-refined base oil (petroleum). | Mixture | - |

**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.**

## 3 . Composition/information on ingredients

The base oil may be a mixture of the following CAS#s: 8042-47-5, 64741-95-3, 64742-01-4, 64742-46-7, 64742-47-8, 64742-53-6, 64742-54-7, 64742-55-8, 64742-62-7, 72623-83-7, 72623-84-8, 72623-85-9, 72623-86-0, 72623-87-1, 178603-64-0, 178603-65-1, 178603-66-2, 445411-73-4

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

**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** : May be combustible at high temperature.

**Extinguishing media**

**Suitable** : Use an extinguishing agent suitable for the surrounding fire.

**Not suitable** : None known.

**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.

**Products of combustion** : Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), asphyxiants, 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** : Low fire hazard. This material must be heated before ignition will occur.

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

## 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. 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**

# 6 . Accidental release measures

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

**Large spill** : Stop leak if without risk. Move containers from spill area. 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). 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. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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

# 8 . Exposure controls/personal protection

| Ingredient | Exposure limits |
|---|---|
| Mixture of severely hydrotreated and hydrocracked and/or solvent-refined base oil (petroleum). | **ACGIH TLV (United States). Notes: (Mineral oil)**<br>TWA: 5 mg/m³, (Inhalable fraction) 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** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**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: organic vapour filter

## 8 . Exposure controls/personal protection

**Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Recommended: neoprene, nitrile, polyvinyl alcohol (PVA), Viton®.

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

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

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

## 9 . Physical and chemical properties

**Physical state** : Viscous liquid.

**Flash point** : Open cup: 152°C (305.6°F) [Cleveland.]

**Auto-ignition temperature** : Not available.

**Flammable limits** : Not available.

**Colour** : Blue-green.

**Odour** : Mild petroleum oil like.

**Odour threshold** : Not available.

**pH** : Not available.

**Boiling/condensation point** : Not available.

**Melting/freezing point** : Not available.

**Relative density** : 0.88 kg/L @ 15°C (59°F)

**Vapour pressure** : Not available.

**Vapour density** : Not available.

**Volatility** : Not available.

**Evaporation rate** : Not available.

**Viscosity** : 20.9 cSt @ 40°C (104°F), 4.5 cSt @ 100°C (212°F), VI=132

**Pour point** : -57°C (-71°F)

**Solubility** : Insoluble in water.

## 10 . Stability and reactivity

**Chemical stability** : The product is stable.

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

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

**Hazardous decomposition products** : May release COx, NOx, SOx, aldehydes, methacrylate monomers, asphyxiants, smoke and irritating vapours when heated to decomposition.

## 11 . Toxicological information

**Acute toxicity**

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---|---|---|---|

# 11 . Toxicological information

| | | | | |
|---|---|---|---|---|
| Mixture of severely hydrotreated and hydrocracked and/or solvent-refined base oil (petroleum). | LD50 Dermal | Rabbit | >2000 mg/kg | - |
| | LD50 Oral | Rat | >5000 mg/kg | - |
| | LC50 Inhalation Dusts and mists | Rat | >5.2 mg/l | 4 hours |

**Conclusion/Summary** : Not available.

**Chronic toxicity**

**Conclusion/Summary** : Not available.

**Irritation/Corrosion**

**Conclusion/Summary** : Not available.

**Sensitiser**

**Conclusion/Summary** : Not available.

**Carcinogenicity**

**Conclusion/Summary** : Not available.

**Classification**

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|---|---|---|---|---|---|---|
| Mixture of severely hydrotreated and hydrocracked and/or solvent-refined base oil (petroleum). | A4 | - | - | - | - | - |

**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.

**Other adverse effects** : No known significant effects or critical hazards.

# 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. 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 | Not regulated. | - | - | - | | - |
| DOT Classification | Not available. | Not available. | Not available. | - | | - |

PG* : Packing group

## 15 . Regulatory information

**United States**

**HCS Classification** : Not regulated.

**Canada**

**WHMIS (Canada)** : Not controlled under WHMIS (Canada).

**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.

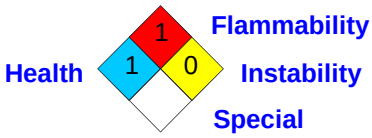
**International lists** : **Australia inventory (AICS)**: All components are listed or exempted.
**China inventory (IECSC)**: All components are listed or exempted.
**Korea inventory**: All components are listed or exempted.
**Philippines inventory (PICCS)**: All components are listed or exempted.

## 16 . Other information

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

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazards | 0 |
| Personal protection | B |

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




**References** : Available upon request.
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**Date of printing** : **2/2/2014.**

**Date of issue** : 19 January 2012

**Date of previous issue** : 10/6/2010.

**Responsible name** : **Product Safety - RS**

**Indicates information that has changed from previously issued version.**

# 16 . Other information

**For Copy of (M)SDS** : The Canadian Controlled Products Regulations (CPR) (Under the Hazardous Products Act, part of the WHMIS legislation) only apply to WHMIS Controlled (i.e., hazardous) products. Therefore, the CPR and the 3-year update rule specified therein do not apply to WHMIS Non-Controlled products. Although this is true, customarily Petro-Canada reviews and updates Non-Controlled product MSDS if a customer requests such an update. These Non-Controlled product updates are given a lower priority than Controlled products but are handled as soon as practicable. If you would like to verify if the MSDS you have is the most current, or you require any further information, please contact:

Internet: lubricants.petro-canada.ca/msds

Lubricants:
Western Canada, telephone: 1-800-661-1199; fax: 1-800-378-4518
Ontario & Central Canada, telephone: 1-800-268-5850; fax: 1-800-201-6285
Quebec & Eastern Canada, telephone: 1-800-576-1686; fax: 1-800-201-6285

For Product Safety Information: (905) 804-4752

**Notice to reader**

**To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.**
**Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.**

# Safety Data Sheet

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

## Delo 400 LE SAE 15W-40

**Product Use:** Heavy Duty Motor Oil
**Product Number(s):** 219719, 222220, 278058
**Synonyms:** Delo 400 LE SAE 15W-40 ISOCLEAN Certified
**Company Identification**
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

**Transportation Emergency Response**
CHEMTREC: (800) 424-9300 or (703) 527-3887
**Health Emergency**
Chevron Emergency & Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
**Product Information**
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

## SECTION 2 HAZARDS IDENTIFICATION

**CLASSIFICATION:** Acute aquatic toxicant: Category 3. Chronic aquatic toxicant: Category 3.

**Environmental Hazards:** Harmful to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS:**
**Prevention:** Avoid release to the environment.
**Disposal:** Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**HAZARDS NOT OTHERWISE CLASSIFIED:** Not Applicable

## SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

| COMPONENTS | CAS NUMBER | AMOUNT |
|---|---|---|
| Highly refined mineral oil (C15 - C50) | Mixture | 70 - 99 %weight |
| Zinc alkyl dithiophosphate | 68649-42-3 | 1 - < 2.5 %weight |

## SECTION 4 FIRST AID MEASURES

**Description of first aid measures**
**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
**Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
**Ingestion:** No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs. If exposure to hydrogen sulfide (H2S) gas is possible during an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

**Most important symptoms and effects, both acute and delayed**
**IMMEDIATE HEALTH EFFECTS**
**Eye:** Not expected to cause prolonged or significant eye irritation.
**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
**Ingestion:** Not expected to be harmful if swallowed.
**Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing. Hydrogen sulfide has a strong rotten-egg odor. However, with continued exposure and at high levels, H2S may deaden a person's sense of smell. If the rotten egg odor is no longer noticeable, it may not necessarily mean that exposure has stopped. At low levels, hydrogen sulfide causes irritation of the eyes, nose, and throat. Moderate levels can cause headache, dizziness, nausea, and vomiting, as well as coughing and difficulty breathing. Higher levels can cause shock, convulsions, coma, and death. After a serious exposure, symptoms usually begin immediately.

The U.S. National Institute for Occupational Safety and Health (NIOSH) considers air concentrations of hydrogen sulfide gas greater than 100 ppm to be Immediately Dangerous to Life and Health (IDLH).

**DELAYED OR OTHER HEALTH EFFECTS:** Not classified

**Indication of any immediate medical attention and special treatment needed**
**Note to Physicians:** Administration of 100% oxygen and supportive care is the preferred treatment for poisoning by hydrogen sulfide gas. For additional information on H2S, see Chevron MSDS No. 301.

## SECTION 5 FIRE FIGHTING MEASURES

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

**PROTECTION OF FIRE FIGHTERS:**
**Fire Fighting Instructions:** This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Phosphorus, Zinc, Sulfur.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in vicinity of spilled material.
**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
**Reporting:** Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

## SECTION 7 HANDLING AND STORAGE

**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
**Precautionary Measures:** Do not breathe gas. Wash thoroughly after handling. Keep out of the reach of children.
**Unusual Handling Hazards:** Toxic quantities of hydrogen sulfide (H2S) may be present in storage tanks and bulk transport vessels which contain or have contained this material. Persons opening or entering these compartments should first determine if H2S is present. See Exposure Controls/Personal Protection -Section 8. Do not attempt rescue of a person over exposed to H2S without wearing approved supplied-air or self-contained breathing equipment. If there is a potential for exceeding one-half the occupational exposure standard, monitoring of hydrogen sulfide levels is required. Since the sense of smell cannot be relied upon to detect the presence of H2S, the concentration should be measured by the use of fixed or portable devices.
**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**GENERAL CONSIDERATIONS:**
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**ENGINEERING CONTROLS:**
Use in a well-ventilated area.

**PERSONAL PROTECTIVE EQUIPMENT**
**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
**Respiratory Protection:** No respiratory protection is normally required.

If material is heated and emits hydrogen sulfide, determine if airborne concentrations are below the occupational exposure limit for hydrogen sulfide. If not, wear an approved positive pressure air-supplying respirator. For more information on hydrogen sulfide, see Chevron MSDS No. 301. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

**Occupational Exposure Limits:**

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

Consult local authorities for appropriate values.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

**Color:** Light to Brown
**Physical State:** Liquid
**Odor:** Petroleum odor
**Odor Threshold:** No data available
**pH:** Not Applicable
**Vapor Pressure:** No data available
**Vapor Density (Air = 1):** No data available
**Initial Boiling Point:** No data available
**Solubility:** Soluble in hydrocarbons; insoluble in water
**Freezing Point:** Not Applicable
**Melting Point:** No data available
**Density:** 0.877 kg/l @ 15°C (59°F) (Typical)
**Viscosity:** 14.60 mm2/s @ 100°C (212°F) (Minimum)
**Evaporation Rate:** No data available
**Decomposition temperature:** No data available
**Octanol/Water Partition Coefficient:** No data available

**FLAMMABLE PROPERTIES:**
**Flammability (solid, gas):** Not Applicable

**Flashpoint:** (Cleveland Open Cup) 204 °C (399 °F) (Minimum)
**Autoignition:** No data available
**Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

## SECTION 10 STABILITY AND REACTIVITY

**Reactivity:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
**Incompatibility With Other Materials:** Not applicable
**Hazardous Decomposition Products:** Alkyl Mercaptans (Elevated temperatures), Hydrogen Sulfide (Elevated temperatures)
**Hazardous Polymerization:** Hazardous polymerization will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

**Information on toxicological effects**
**Serious Eye Damage/Irritation:** The eye irritation hazard is based on evaluation of data for product components.

**Skin Corrosion/Irritation:** The skin irritation hazard is based on evaluation of data for product components.

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

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

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

**Acute Inhalation Toxicity:** The acute inhalation toxicity hazard is based on evaluation of data for product components.
**Acute Toxicity Estimate:** Not Determined

**Germ Cell Mutagenicity:** The hazard evaluation is based on data for components or a similar material.

**Carcinogenicity:** The hazard evaluation is based on data for components or a similar material.

**Reproductive Toxicity:** The hazard evaluation is based on data for components or a similar material.

**Specific Target Organ Toxicity - Single Exposure:** The hazard evaluation is based on data for components or a similar material.

**Specific Target Organ Toxicity - Repeated Exposure:** The hazard evaluation is based on data for components or a similar material.

**ADDITIONAL TOXICOLOGY INFORMATION:**
During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

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

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

## SECTION 12 ECOLOGICAL INFORMATION

**ECOTOXICITY**
This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment.
The product has not been tested. The statement has been derived from the properties of the individual components.

**MOBILITY**
No data available.

**PERSISTENCE AND DEGRADABILITY**
This material is not expected to be readily biodegradable. The biodegradability of this material is based on an

evaluation of data for the components or a similar material.
The product has not been tested. The statement has been derived from the properties of the individual components.

**POTENTIAL TO BIOACCUMULATE**
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

## SECTION 13 DISPOSAL CONSIDERATIONS

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

## SECTION 14 TRANSPORT INFORMATION

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

**DOT Shipping Description:** NOT REGULATED AS HAZARDOUS MATERIAL UNDER 49 CFR

**IMO/IMDG Shipping Description:** NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

**ICAO/IATA Shipping Description:** NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:**
Not applicable

## SECTION 15 REGULATORY INFORMATION

**EPCRA 311/312 CATEGORIES:** Not applicable

**REGULATORY LISTS SEARCHED:**

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

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

| | |
|---|---|
| Zinc alkyl dithiophosphate | 06, 07 |

**CHEMICAL INVENTORIES:**
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: EINECS (European Union), ENCS (Japan), IECSC (China), TCSI (Taiwan).

**NEW JERSEY RTK CLASSIFICATION:**

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

## SECTION 16 OTHER INFORMATION

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

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

**REVISION STATEMENT:** SECTION 02 - Environmental Classification information was added.
SECTION 02 - Hazard Statements information was added.
SECTION 02 - Hazards Otherwise Not Classified information was modified.
SECTION 02 - Precautionary Statements information was added.
SECTION 03 - Composition information was modified.
SECTION 08 - General Considerations information was modified.
SECTION 09 - Physical/Chemical Properties information was deleted.
SECTION 09 - Physical/Chemical Properties information was modified.
SECTION 12 - Ecological Information information was modified.
SECTION 15 - Chemical Inventories information was modified.
SECTION 15 - New Jersey Right To Know information was modified.
SECTION 15 - Regulatory Information information was added.

**Revision Date:** January 20, 2020

**ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:**

| | |
|---|---|
| TLV - Threshold Limit Value | TWA - Time Weighted Average |
| STEL - Short-term Exposure Limit | PEL - Permissible Exposure Limit |
| GHS - Globally Harmonized System | CAS - Chemical Abstract Service Number |
| ACGIH - American Conference of Governmental Industrial Hygienists | IMO/IMDG - International Maritime Dangerous Goods Code |
| API - American Petroleum Institute | SDS - Safety Data Sheet |
| HMIS - Hazardous Materials Information System | NFPA - National Fire Protection Association (USA) |
| DOT - Department of Transportation (USA) | NTP - National Toxicology Program (USA) |
| IARC - International Agency for Research on Cancer | OSHA - Occupational Safety and Health Administration |
| NCEL - New Chemical Exposure Limit | EPA - Environmental Protection Agency |
| SCBA - Self-Contained Breathing Apparatus | |

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

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

# USED OIL

# MATERIAL SAFETY DATA SHEET

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** **USED OIL**

**SYNONYMS:** Waste oil; Used lubricating oil; Oil and water mixture

**PRODUCT PART NUMBER(S):** Not applicable.

**PRODUCT USE:** Oil or water mixture for re-refining or reprocessing.
If this product is used in combination with other products, refer to the Material Safety Data Sheets for those products.

**These numbers are for emergency use only. If you desire non-emergency product information, please call a phone number listed below.**

**24-HOUR EMERGENCY PHONE NUMBERS**
**MEDICAL AND TRANSPORTATION (SPILL):**

**1-800-468-1760**

**MANUFACTURER/ SUPPLIER:** Safety-Kleen Systems, Inc.
5400 Legacy Drive
Cluster II, Building 3
Plano, Texas 75024
USA
**1-800-669-5740**
**www.Safety-Kleen.com**

**TECHNICAL INFORMATION: 1-800-669-5740 Press 1 then 1 then Extension 7500**

**MSDS FORM NUMBER:** 81451 **ISSUE:** September 20, 2007

**ORIGINAL ISSUE:** January 15, 1990 **SUPERSEDES:** June 11, 2007

**PREPARED BY:** Product MSDS Coordinator **APPROVED BY:** MSDS Task Force

## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

| | | | | OSHA PEL | | ACGIH TLV® | | | |
|---|---|---|---|---|---|---|---|---|---|
| WT% | NAME | SYNONYM | CAS NO. | TWA | STEL | TWA | STEL | LD[a] | LC[b] |
| 80 to 100 | Lubricating oils, used | Used oil | 70514-12-4 | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. |
| 0 to 20* | Water/solids | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. |
| 0 to 10* | Hydrocarbon solvents. May include gasoline, diesel fuel, jet fuel, mineral spirits, etc. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. |
| 0 to 1.5* | Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel, and others: each below 1.0 WT%. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. |
| 0 to 1.0* | Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3 WT%. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. |
| 0 to 0.5* | Chlorinated solvents. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. | N. Av. |

N.Av. = Not Available

*Even though the concentration range does not fall under the ranges prescribed by WHMIS, this is the actual range which varies with each batch of the product.

[a] Oral-Rat $LD_{50}$ (mg/kg)

[b] Inhalation-Rat $LC_{50}$

## SECTION 3: HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

**APPEARANCE**

Liquid, black and viscous (thick), petroleum odor.

**WARNING!**

**PHYSICAL HAZARDS**

Combustible liquid.

**HEALTH HAZARDS**

May be harmful if inhaled.
May be harmful if absorbed through skin.
May be harmful or fatal if swallowed.
May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin.
Suspect cancer hazard. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.
Contains material which can cause birth defects.
Contains material which can cause central nervous system damage.

**ENVIRONMENTAL HAZARDS**

Product may be toxic to fish, plants, wildlife, and/or domestic animals.

## POTENTIAL HEALTH EFFECTS

### Effects may vary depending on material composition. Typical effects may include:

**INHALATION (BREATHING):** High concentrations of vapor or mist may be harmful if inhaled. High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects. Massive acute overexposure may cause rapid central nervous system depression, sudden collapse, coma, and/or death.

**EYES:** May cause irritation.

**SKIN:** May cause irritation. Product may be absorbed through the skin and cause harm as noted under **INHALATION (BREATHING)**.

**INGESTION (SWALLOWING):** May be harmful or fatal if swallowed. May cause throat irritation, nausea, vomiting, and central nervous system effects as noted under **INHALATION (BREATHING)**. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Individuals with pre-existing cardiovascular, liver, kidney, respiratory tract (nose, throat, and lungs), central nervous system, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

**CHRONIC:** Prolonged or repeated inhalation may cause oil pneumonia, lung tissue inflammation, fibrous tissue formation, and/or toxic effects as noted under **INHALATION (BREATHING)**. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis).

**CANCER INFORMATION:** This product contains mineral oils, untreated or mildly treated, which can cause cancer. This product may contain hydrocarbon and chlorinated solvents; metals, and polynuclear aromatics which can cause cancer. Risk of cancer depends on duration and level of exposure. For more information, see **SECTION 11: CARCINOGENICITY**.

## POTENTIAL ENVIRONMENTAL EFFECTS

Product may be toxic to fish, plants, wildlife, and/or domestic animals.
Also see **SECTION 12: ECOLOGICAL INFORMATION**.

## SECTION 4: FIRST AID MEASURES

**INHALATION: (BREATHING)** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.

**EYES:** If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Upon contact, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention.

**SKIN:** Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists.

**INGESTION: (SWALLOWING)** Do NOT induce vomiting. Immediately get medical attention. Call 1-800-468-1760 for additional information.
If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything to an unconscious person by mouth.

**NOTE TO PHYSICIANS:** Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for additional information.

## SECTION 5: FIRE FIGHTING MEASURES

**FLASH POINT:** >200°F (93°C) (minimum) Pensky-Martens Closed Cup

**FLAMMABLE LIMITS IN AIR:** Not available.

**AUTOIGNITION TEMPERATURE:** Not available.

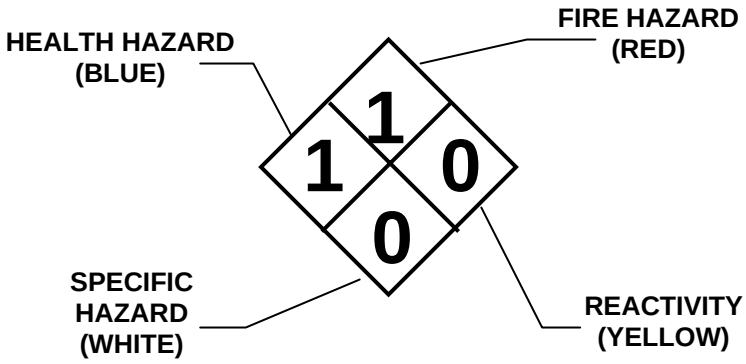
**HAZARDOUS COMBUSTION PRODUCTS:** Decomposition and combustion materials may be toxic. Burning may produce phosgene gas, nitrogen oxides, carbon monoxide, and unidentified organic compounds.

**CONDITIONS OF FLAMMABILITY:** Heat, sparks, or flame. Product may burn but does not ignite readily.

**EXTINGUISHING MEDIA:** Use carbon dioxide, regular foam, dry chemical, water spray, or water fog.

**NFPA 704 HAZARD IDENTIFICATION:**

This information is intended solely for the use by individuals trained in this system.




**FIRE FIGHTING INSTRUCTIONS:**

Keep storage containers cool with water spray. A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

**FIRE AND EXPLOSION HAZARDS:**

Heated containers may rupture. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact. Product may be sensitive to static discharge, which could result in fire or explosion.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface waters and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal.

Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

There may be specific federal regulatory reporting requirements associated with spills, leaks, or releases of this product. Also see **SECTION 15: REGULATORY INFORMATION.**

## SECTION 7: HANDLING AND STORAGE

**HANDLING:** Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, storage tanks, tanker trucks, and rail tank cars should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes. Do not smoke while using this product.

**SHIPPING AND STORING:** Keep container tightly closed when not in use and during transport. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from heat, flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous. See **SECTION 14: TRANSPORT INFORMATION** for Packing Group information.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Use general ventilation, process enclosures, local exhaust ventilation, or other engineering controls to control air-borne levels. Where explosive mixtures may be present, equipment safe for such locations should be used.

**PERSONAL PROTECTIVE EQUIPMENT**

**RESPIRATORY PROTECTION:** A respiratory protection program which meets USA's OSHA General Industry Standard 29 CFR 1910.134 or Canada's CSA Standard Z94.4-M1982 requirements must be followed whenever workplace conditions warrant a respirator's use. Consult a qualified Industrial Hygienist or Safety Professional for respirator selection guidance.

**EYE PROTECTION:** Wearing chemical goggles is recommended.
Contact lens may be worn with eye protection.

**SKIN PROTECTION:** Where prolonged or repeated skin contact is likely, wear neoprene, nitrile (4 mil minimum), PVC (polyvinyl chloride), or equivalent protective gloves; wearing natural rubber or equivalent gloves is not recommended.

When product is heated and skin contact is likely, wear heat-insulating gloves, boots, and other protective clothing.

To avoid prolonged or repeated contact with product where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits, or other protective clothing.

| | |
|---|---|
| **PERSONAL HYGIENE:** | Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard affected clothing, shoes, and/or protective equipment if they cannot be thoroughly cleaned. Discard leather articles, such as shoes, saturated with the product. |
| **OTHER PROTECTIVE EQUIPMENT:** | Where spills and splashes are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area. |

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **PHYSICAL STATE, APPEARANCE, AND ODOR:** | Liquid, black and viscous (thick), petroleum odor. |
| **ODOR THRESHOLD:** | Not available. |
| **MOLECULAR WEIGHT:** | Not applicable. |
| **SPECIFIC GRAVITY:** | 0.8 to 1.0 at 60°F (15.6°C) (water = 1) |
| **DENSITY:** | 6.7 to 8.3 LB/US gal (800 to 1000 g/l) (approximately) |
| **VAPOR DENSITY:** | greater than 1 (air = 1) (based on kerosene) |
| **VAPOR PRESSURE:** | Not available. |
| **BOILING POINT:** | Not available. |
| **FREEZING/MELTING POINT:** | Not available. |
| **pH:** | Not applicable. |
| **EVAPORATION RATE:** | less than 1 (butyl acetate = 1) |
| **SOLUBILITY IN WATER:** | Slight. |
| **FLASH POINT:** | >200°F (93°C) (minimum) Pensky-Martens Closed Cup |
| **FLAMMABLE LIMITS IN AIR:** | Not available. |
| **AUTOIGNITION TEMPERATURE:** | Not available. |

## SECTION 10: STABILITY AND REACTIVITY

**STABILITY:** Stable under normal temperatures and pressures. Avoid heat, sparks, or flame.

**INCOMPATIBILITY:** Avoid acids, alkalies, oxidizing agents, reducing agents, reactive halogens, or reactive metals.

**REACTIVITY:** Polymerization is not known to occur under normal temperatures and pressures. Not reactive with water.

**HAZARDOUS DECOMPOSITION PRODUCTS:** None under normal temperatures and pressures. Also see **SECTION 5: HAZARDOUS COMBUSTION PRODUCTS**.

## SECTION 11: TOXICOLOGICAL INFORMATION

**SENSITIZATION:** Based on best current information, there may be known human sensitization associated with this product.

**MUTAGENICITY:** Based on best current information, there may be mutagenicity associated with this product.

**CARCINOGENICITY:** Mineral oils, untreated or mildly treated are listed by IARC as a known carcinogen. Mineral oils, untreated or mildly treated are classified by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

There may be hydrocarbon and chlorinated solvents; metals, and polynuclear aromatics present in this product which are listed by OSHA as known carcinogens. There may be hydrocarbon and chlorinated solvents; metals, and polynuclear aromatics present in this product which are listed by IARC as known, probable, or possible carcinogens. There may be hydrocarbon and chlorinated solvents; metals, and polynuclear aromatics present in this product which are classified by NTP as known carcinogens or as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. There may be hydrocarbon and chlorinated solvents; metals, and polynuclear aromatics present in this product which are recognized by ACGIH as confirmed or suspected human carcinogens.

Also see **SECTION 3: CANCER INFORMATION**.

**REPRODUCTIVE TOXICITY:** Based on best current information, there may be reproductive toxicity associated with this product.

**TERATOGENICITY:** Based on best current information, there may be teratogenicity associated with this product.

**TOXICOLOGICALLY SYNERGISTIC PRODUCT(S):** Based on best current information, there may be toxicologically synergistic products associated with this product.

## SECTION 12: ECOLOGICAL INFORMATION

**ECOTOXICITY:** Not available.

**OCTANOL/WATER PARTITION COEFFICIENT:** Not available.

**VOLATILE ORGANIC COMPOUNDS:** Not available.
As per 40 CFR Part 51.100(s).

## SECTION 13: DISPOSAL CONSIDERATIONS

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

## SECTION 14: TRANSPORT INFORMATION

**DOT:** Not regulated.

**TDG:** Not regulated.

**EMERGENCY RESPONSE GUIDE NUMBER:** Not applicable.
Reference *North American Emergency Response Guidebook*

## SECTION 15: REGULATORY INFORMATION

**USA REGULATIONS SARA SECTIONS 302 AND 304:** Based on the ingredient(s) listed in **SECTION 2**, this product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

**SARA SECTIONS 311 AND 312:** This product poses the following physical and health hazards as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):

Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard

**SARA SECTION 313:** This product may contain "toxic" chemicals subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

**CERCLA:** This product may contain “hazardous substances” listed pursuant to Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4.

**TSCA:** Not available.

**CALIFORNIA:** This product is not for sale or use in the State of California.

**CANADIAN REGULATIONS**
**WHMIS:** Not regulated

**CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):** Not available.

## SECTION 16: OTHER INFORMATION

**REVISION INFORMATION:** Change from MSIS to MSDS.

**LABEL/OTHER INFORMATION:** Not available.



# Material Safety Data Sheet

DIESEL FUEL

## 1 . Product and company identification

**Product name** : DIESEL FUEL

**Synonym** : Seasonal Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, D50, D60, P40, P50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend, B1, B2, B5, Diesel Low Cloud (LC), Marine Gas Oil.

**Code** : W104, W293

**Material uses** : 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.

**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** : Bright oily liquid.

**Odour** : Mild petroleum oil 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).
Class D-2B: Material causing other toxic effects (Toxic).

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

**Emergency overview** : WARNING!

COMBUSTIBLE LIQUID AND VAPOUR. CAUSES EYE AND SKIN IRRITATION.

Combustible liquid. Severely irritating to the skin. Irritating to eyes. Keep away from heat, sparks and flame. Do not get in eyes. Avoid breathing vapour or mist. Avoid contact with skin and clothing. 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** : Severely irritating to the skin.

**Eyes** : Irritating to eyes.

**Potential chronic health effects**

**Chronic effects** : No known significant effects or critical hazards.

**Carcinogenicity** : Diesel engine exhaust particulate is probably carcinogenic to humans (IARC Group 2A).

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

## 2 . Hazards identification

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

**Medical conditions aggravated by over-exposure** : Avoid prolonged or repeated skin contact to diesel fuels which can lead to dermal irritation and may be associated with an increased risk of skin cancer.

**See toxicological information (Section 11)**

## 3 . Composition/information on ingredients

| Name | CAS number | % |
|---|---|---|
| Hydrotreated Renewable Diesel/ Fuels, diesel/ Fuel Oil No. 1/ Fuel Oil No. 2 | 64742-81-0/ 68334-30-5/ 8008-20-6/ 68476-30-2 | 95 - 100 |
| Alkanes, C10 – 20 Branched and Linear (R100) | 928771-01-1 | 10 - 20 |
| Fatty acids methyl esters | 61788-61-2 / 67784-80-9 / 73891-99-3 | 0 - 5 |

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

## 4 . First-aid measures

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

**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** : Combustible liquid

**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.

**Products of combustion** : Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), sulphur compounds (H2S), 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.

## 5 . Fire-fighting measures

**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.

**Special remarks on explosion hazards** : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Runoff to sewer may create fire or explosion hazard.

## 6 . Accidental release measures

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

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

**Methods for cleaning up**

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

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

## 7 . Handling and storage

**Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not ingest. Avoid contact with eyes, skin and clothing. 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.

**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 |
|---|---|
| Fuels, diesel | **ACGIH TLV (United States). Absorbed through skin.** TWA: 100 mg/m³, (Inhalable fraction and vapour) 8 hour(s). |
| Fuel oil No. 2 | **ACGIH TLV (United States). Absorbed through skin.** TWA: 100 mg/m³, (Inhalable fraction and vapour) 8 hour(s). |
| Hydrotreated Renewable Diesel | **ACGIH TLV (United States). Absorbed through skin.** TWA: 200 mg/m³ 8 hour(s). |
| Fuel oil No. 1 | **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: 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: nitrile, neoprene, polyvinyl alcohol (PVA), Viton®. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

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

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

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

# 9 . Physical and chemical properties

**Physical state** : Bright oily liquid.

**Flash point** : Diesel fuel and other distillate fuels: Closed cup: ≥40°C (≥104°F)
Marine Diesel/MDO/Naval Distillate: Closed Cup: ≥60°C (≥140°F)
Mining Diesel: Closed Cup: ≥52°C (≥126°F)

**Auto-ignition temperature** : 225°C (437°F)

**Flammable limits** : Lower: 0.7%
Upper: 6%

**Colour** : Clear to yellow (This product may be dyed red for taxation purposes).

**Odour** : Mild petroleum oil like.

**Odour threshold** : Not available.

**pH** : Not available.

**Boiling/condensation point** : 150 to 371°C (302 to 699.8°F)

**Melting/freezing point** : Not available.

**Relative density** : 0.80 to 0.88 kg/L @ 15°C (59°F)

**Vapour pressure** : 1 kPa (7.5 mm Hg) @ 20°C (68ºF).

**Vapour density** : 4.5 [Air = 1]

**Volatility** : Not available.

**Evaporation rate** : Not available.

**Viscosity** : Diesel fuel: 1.3 - 4.1 cSt @ 40°C (104°F)
Marine Diesel Fuel: 1.3 - 4.4 cSt @ 40°C (104°F)

**Pour point** : Not available.

**Solubility** : Insoluble in cold water, soluble in non-polar hydrocarbon 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 and acids.

**Hazardous decomposition products** : May release COx, NOx, SOx, $H_2S$, smoke and irritating vapours when heated to decomposition.

# 11 . Toxicological information

**Acute toxicity**

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---|---|---|---|
| Fuels, diesel | LD50 Dermal | Mouse | 24500 mg/kg | - |
| | LD50 Oral | Rat | 7500 mg/kg | - |
| Fuel oil No. 2 | LD50 Oral | Rat | 12000 mg/kg | - |
| Fuel oil No. 1 | LD50 Dermal | Rabbit | >2000 mg/kg | - |
| | LD50 Oral | Rat | >5000 mg/kg | - |
| | LC50 Inhalation Vapour | Rat | >5000 mg/m³ | 4 hours |
| Hydrotreated Renewable Diesel | LD50 Dermal | Rabbit | >2000 mg/kg | - |
| | LD50 Oral | Rat | >5000 mg/kg | - |
| | LC50 Inhalation Vapour | Rat | >5200 mg/m³ | 4 hours |

**Conclusion/Summary** : Not available.

**Chronic toxicity**

**Conclusion/Summary** : Not available.

**Irritation/Corrosion**

**Conclusion/Summary** : Not available.

**Sensitiser**

## 11 . Toxicological information

**Conclusion/Summary** : Not available.

**Carcinogenicity**

**Conclusion/Summary** : Diesel engine exhaust particulate is probably carcinogenic to humans (IARC Group 2A).

**Classification**

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|---|---|---|---|---|---|---|
| Fuels, diesel | A3 | 3 | - | - | - | - |
| Fuel oil No. 1 | A3 | 3 | - | - | - | - |
| Fuel oil No. 2 | A3 | 3 | - | - | - | - |
| Hydrotreated Renewable Diesel | 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 | UN1202 | DIESEL FUEL | 3 | III |  | - |
| DOT Classification | Not available. | Not available. | Not available. | - | | - |

# 14 . Transport information

PG* : Packing group

# 15 . Regulatory information

**United States**

**HCS Classification** : Combustible liquid
Irritating material

**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).
Class D-2B: Material causing other toxic effects (Toxic).

**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. CAUSES EYE AND SKIN IRRITATION.

**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** : **4/14/2014.**

**Date of issue** : 28 June 2013

**Date of previous issue** : No previous validation.

**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.**

# SAFETY DATA SHEET

# JET A/A-1 AVIATION TURBINE FUEL

**000003001081**

Version 2.0 Revision Date 2016/07/20 Print Date 2016/07/20

## SECTION 1. IDENTIFICATION

| | | |
|---|---|---|
| Product name | : | JET A/A-1 AVIATION TURBINE FUEL |
| Synonyms | : | Jet A-1; Jet A-1-DI; Aviation Turbine Kerosene (ATK); JP-8; NATO F-34; Jet F-34; Aviation Turbine Fuel, Kerosene Type (CAN/CGSB 3.23 & CAN/CGSB 3.24) |
| Product code | : | 101851, 100123 |
| Manufacturer or supplier's details | | Petro-Canada<br>P.O. Box 2844, 150 - 6th Avenue South-West<br>Calgary Alberta T2P 3E3<br>Canada |
| Emergency telephone number | | Suncor Energy: +1 403-296-3000;<br>Poison Control Centre: Consult local telephone directory for emergency number(s). |

**Recommended use of the chemical and restrictions on use**

| | | |
|---|---|---|
| Recommended use | : | 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. |
| Prepared by | : | Product Safety: +1 905-804-4752 |

## SECTION 2. HAZARDS IDENTIFICATION

**Emergency Overview**

| | |
|---|---|
| Appearance | Clear liquid. |
| Colour | Clear and colourless |
| Odour | Kerosene-like. |

**GHS Classification**

| | | |
|---|---|---|
| Flammable liquids | : | Category 3 |
| Skin irritation | : | Category 2 |
| Reproductive toxicity | : | Category 2 |
| Specific target organ toxicity - single exposure | : | Category 3 (Central nervous system) |
| Aspiration hazard | : | Category 1 |

**GHS label elements**

Hazard pictograms :

Signal word : Danger

Hazard statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause drowsiness or dizziness.
Suspected of damaging fertility or the unborn child.

Precautionary statements : **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ eye protection/ face protection.
Use personal protective equipment as required.
**Response:**
IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
**Storage:**
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
**Disposal:**
Dispose of contents/ container to an approved waste disposal plant.

**Potential Health Effects**

Primary Routes of Entry : Eye contact
Ingestion
Inhalation

Skin contact

Inhalation : Inhalation may cause central nervous system effects. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Skin : May irritate skin.

Eyes : May irritate eyes.

Ingestion : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Aspiration hazard if swallowed - can enter lungs and cause damage.

Aggravated Medical Condition : None known.

**Other hazards**

None known.

**IARC** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

**Hazardous components**

| Chemical name | CAS-No. | Concentration |
|---|---|---|
| kerosine (petroleum) | 8008-20-6 | 90 - 100 % |
| 2-(2-methoxyethoxy)ethanol | 111-77-3 | 0 - 0.2 % |

## SECTION 4. FIRST AID MEASURES

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

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

| | | |
|---|---|---|
| | | and shoes.<br>Wash skin thoroughly with soap and water or use recognized skin cleanser.<br>Wash clothing before reuse.<br>Seek medical advice. |
| In case of eye contact | : | Remove contact lenses.<br>Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.<br>Obtain medical attention. |
| If swallowed | : | Rinse mouth with water.<br>DO NOT induce vomiting unless directed to do so by a physician or poison control center.<br>Never give anything by mouth to an unconscious person.<br>Seek medical advice. |
| Most important symptoms and effects, both acute and delayed | : | First aider needs to protect himself. |

## SECTION 5. FIREFIGHTING MEASURES

| | | |
|---|---|---|
| Suitable extinguishing media | : | Dry chemical<br>Carbon dioxide (CO2)<br>Water fog.<br>Foam |
| Unsuitable extinguishing media | : | Do NOT use water jet. |
| Specific hazards during firefighting | : | 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 for firefighters | : | Wear self-contained breathing apparatus for firefighting if necessary. |

## SECTION 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Ensure adequate ventilation.<br>Evacuate personnel to safe areas.<br>Material can create slippery conditions. |
| Environmental precautions | : | If the product contaminates rivers and lakes or drains inform respective authorities. |

| | | |
|---|---|---|
| Methods and materials for containment and cleaning up | : | Prevent further leakage or spillage if safe to do so.<br>Remove all sources of ignition.<br>Soak up with inert absorbent material.<br>Non-sparking tools should be used.<br>Ensure adequate ventilation.<br>Contact the proper local authorities. |

## SECTION 7. HANDLING AND STORAGE

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

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| kerosine (petroleum) | 8008-20-6 | TWA | 100 mg/m3 | NIOSH REL |
| | | TWA | 500 ppm<br>2,000 mg/m3 | OSHA Z-1 |
| | | TWA | 200 mg/m3<br>(total hydrocarbon vapor) | ACGIH |
| | | TWA | 400 ppm<br>1,600 mg/m3 | OSHA P0 |

| | | |
|---|---|---|
| **Engineering measures** | : | Use only in well-ventilated areas.<br>Ensure that eyewash station and safety shower are proximal to the work-station location. |

**Personal protective equipment**

| | | |
|---|---|---|
| Respiratory protection | : | 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.<br>Wash face, hands and any exposed skin thoroughly after handling. |

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | Clear liquid. |
| Colour | : | Clear and colourless |
| Odour | : | Kerosene-like. |
| Odour Threshold | : | No data available |

| | | |
|---|---|---|
| pH | : | No data available |
| Pour point | : | -51 °C (-60 °F)No data available |
| Boiling point/boiling range | : | 140 - 300 °C (284 - 572 °F) |
| Flash point | : | > 38 °C (100 °F)<br>Method: Tagliabue |
| Auto-Ignition Temperature | : | 210 °C (410 °F) |
| Evaporation rate | : | No data available |
| Flammability | : | 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. |
| Upper explosion limit | : | 5 %(V) |
| Lower explosion limit | : | 0.7 %(V) |
| Vapour pressure | : | 5.25 mmHg (20 °C / 68 °F) |
| Relative vapour density | : | 4.5 |
| Relative density | : | 0.775 - 0.84 (15 °C / 59 °F) |
| Solubility(ies) | | |
| Water solubility | : | No data available |
| Partition coefficient: n-octanol/water | : | No data available |
| Viscosity | | |
| Viscosity, kinematic | : | 1.0 - 1.9 cSt (40 °C / 104 °F) |
| Explosive properties | : | 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. |

## SECTION 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Possibility of hazardous reactions | : | Hazardous polymerisation does not occur.<br>Stable under normal conditions. |
| Conditions to avoid | : | Extremes of temperature and direct sunlight. |

| | | |
|---|---|---|
| Incompatible materials | : | 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. |

## SECTION 11. TOXICOLOGICAL INFORMATION

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

**Acute toxicity**

**Product:**

| | | |
|---|---|---|
| Acute oral toxicity | : | Remarks: No data available |
| Acute inhalation toxicity | : | Remarks: No data available |
| Acute dermal toxicity | : | Remarks: No data available |

**Components:**

**kerosine (petroleum):**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): > 5,000 mg/kg, |
| Acute inhalation toxicity | : | LC50 (Rat): > 5 mg/l<br>Exposure time: 4 h<br>Test atmosphere: dust/mist |
| Acute dermal toxicity | : | LD50 (Rabbit): > 2,000 mg/kg, |

**Skin corrosion/irritation**

**Product:**
Remarks: No data available

**Serious eye damage/eye irritation**

**Product:**
Remarks: No data available

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**
No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**STOT - single exposure**

No data available

**STOT - repeated exposure**

No data available

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Product:**

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

**Persistence and degradability**

**Product:**

| | | |
|---|---|---|
| Biodegradability | : | Remarks: No data available |

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects**

No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | The product should not be allowed to enter drains, water courses or the soil.<br>Offer surplus and non-recyclable solutions to a licensed disposal company.<br>Waste must be classified and labelled prior to recycling or disposal.<br>Send to a licensed waste management company.<br>Dispose of product residue in accordance with the instructions of the person responsible for waste disposal. |

Contaminated packaging : Do not re-use empty containers.

## SECTION 14. TRANSPORT INFORMATION

**International Regulations**

**IATA-DGR**

| | | |
|---|---|---|
| UN/ID No. | : | UN 1863 |
| Proper shipping name | : | Fuel, aviation, turbine engine |
| Class | : | 3 |
| Packing group | : | III |
| Labels | : | Class 3 - Flammable Liquid |
| Packing instruction (cargo aircraft) | : | 366 |

**IMDG-Code**

| | | |
|---|---|---|
| UN number | : | UN 1863 |
| Proper shipping name | : | FUEL, AVIATION, TURBINE ENGINE |
| Class | : | 3 |
| Packing group | : | III |
| Labels | : | 3 |
| EmS Code | : | F-E, S-E |
| Marine pollutant | : | no |

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

**National Regulations**

**49 CFR**

| | | |
|---|---|---|
| UN/ID/NA number | : | UN 1863 |
| Proper shipping name | : | Fuel, aviation, turbine engine |
| Class | : | 3 |
| Packing group | : | III |
| Labels | : | Class 3 - Flammable Liquid |
| ERG Code | : | 128 |
| Marine pollutant | : | no |

## SECTION 15. REGULATORY INFORMATION

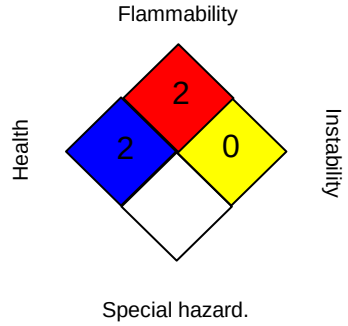
**The components of this product are reported in the following inventories:**

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

## SECTION 16. OTHER INFORMATION

### Further information

**NFPA:**




**HMIS III:**

| | |
|---|---|
| HEALTH | 2* |
| FLAMMABILITY | 2 |
| PHYSICAL HAZARD | 0 |
| PERSONAL PROTECTION | H |

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

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: 1 905-804-4752

Prepared by : Product Safety: +1 905-804-4752

Revision Date : 2016/07/20

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.

# APPENDIX 3

## Immediately Reportable Spill Quantities

**Appendix A**
**Schedule 1 – Reportable Quantities for NT–NU Spills**

| Substance | Reportable Quantity | TDG Class |
|---|---|---|
| Explosives | Any amount | 1.0 |
| Compressed gas (toxic/corrosive) | | 2.3/2.4 |
| Infectious substances | | 6.2 |
| Sewage and wastewater (unless otherwise authorized) | | 6.2 |
| Radioactive materials | | 7.0 |
| Unknown substance | | None |
| Compressed gas (Flammable) | Any amount of gas from containers with a capacity greater than 100 L | 2.1 |
| Compressed gas (Non-corrosive, non-flammable) | | 2.2 |
| Flammable liquid | ≥ 100 L | 3.1/3.2/3.3 |
| Flammable solid | ≥ 25 kg | 4.1 |
| Substances liable to spontaneous combustion | | 4.2 |
| Water reactant substances | | 4.3 |
| Oxidizing substances | ≥ 50 L or 50 kg | 5.1 |
| Organic peroxides | ≥ 1 L or 1 kg | 5.2 |
| Environmentally hazardous substances intended for disposal | | 9.0 |
| Toxic substances | ≥ 5 L or 5 kg | 6.1 |
| Corrosive substances | | 8.0 |
| Miscellaneous products, substances or organisms | | 9.0 |
| PCB mixtures of 5 or more parts per million | ≥ 0.5 L or 0.5 kg | 9.0 |
| Other contaminants, e.g. crude oil, drilling fluid, produced water, waste or spent chemicals, used or waste oil, vehicle fluids, wastewater, etc. | ≥ 100 L or 100 kg | None |
| Sour natural gas (i.e., contains $H_2S$) | Uncontrolled release or sustained flow of 10 minutes or more | None |
| Sweet natural gas | | |
| Flammable liquid | ≥ 20 L | 3.1/3.2/3.3 |
| Vehicle fluids | When released on a frozen water body that is being used as a working surface | None |
| Reported releases or potential releases of any size that:<br>1. Are near or in an open water body;<br>2. Are near or in a designated sensitive environment or habitat;<br>3. Pose an imminent threat to human health or safety; or<br>4. Pose an imminent threat to a listed species at risk or its critical habitat | Any amount | None |

Note: L = litre; kg = kilogram; PCB = Polychlorinated Biphenyls; ppm = parts per million

# APPENDIX 4

# NWT-NU Spill Report Form

# NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

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

**REPORT LINE USE ONLY**

| | | | | |
|---|---|---|---|---|
| A | REPORT DATE: MONTH – DAY – YEAR | REPORT TIME | ☐ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT | REPORT NUMBER ____-_____ |
| B | OCCURRENCE DATE: MONTH – DAY – YEAR | OCCURRENCE TIME | | |

| | | |
|---|---|---|
| C | LAND USE PERMIT NUMBER (IF APPLICABLE) | WATER LICENCE NUMBER (IF APPLICABLE) |
| D | GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION | REGION ☐ NWT ☐ 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 | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES | U.N. NUMBER |
| | SECOND PRODUCT SPILLED (IF APPLICABLE) | 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 STATION OPERATOR | EMPLOYER | LOCATION CALLED YELLOWKNIFE, NT | REPORT LINE NUMBER (867) 920-8130 |

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC

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 | | | |

# Instructions for Completing the NT-NU Spill Report Form

**This form can be filled out electronically and e-mailed as an attachment to spills@gov.nt.ca. Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call to the spill line. Forms can also be printed and faxed to the spill line at 867-873-6924. Spills can still be phoned in by calling collect at 867-920-8130.**

| | |
|---|---|
| **A. Report Date/Time** | The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. **Please do not fill in the Report Number**: the spill line will assign a number after the spill is reported. |
| **B. Occurrence Date/Time** | Indicate, to the best of your knowledge, the exact date and time that the spill occurred. Not to be confused with the report date and time (see above). |
| **C. Land Use Permit Number /Water Licence Number** | This only needs to be filled in if the activity has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been issued. Applies primarily to mines and mineral exploration sites. |
| **D. Geographic Place Name** | In most cases, this will be the name of the city or town in which the spill occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. **You must include the geographic coordinates** (Refer to Section E). |
| **E. Geographic Coordinates** | This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude. |
| **F. Responsible Party Or Vessel Name** | This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. **Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.** |
| **G. Contractor involved?** | Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill. |
| **H. Product Spilled** | Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B) |
| **I. Spill Source** | Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 $m^2$) |
| **J. Factors Affecting Spill** | Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space. |
| **K. Additional Information** | Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. **Please number the pages to ensure that recipients can be certain that they received all pertinent documents.** If only the spill report form was filled out, number the form as "Page 1 of 1". |
| **L. Reported to Spill Line by** | Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space. |
| **M. Alternate Contact** | Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill. |
| **N. Report Line Use Only** | **Leave Blank**. This box is for the **Spill Line's use only**. |