

SPILL PREVENTION AND SPILL RESPONSE PLAN

**TED, TURNER, McAVOY,
GELA PROPERTIES
NUNAVUT, CANADA**

Prepared for:



Prepared by:

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1 Introduction

This Spill Prevention and Response Plan (“SPRP”) applies to mineral exploration activities to be conducted by Bathurst Metals Ltd. (“Bathurst” or “BM” or “the Company”) on the Ted, Turner, McAvoy and Gela Properties (“TTMG” or the “Properties” or the “Project”), Nunavut, Canada.

This SPRP will come into effect pending approval from all relevant regulatory bodies. Copies and updates to this plan may be obtained via the Company. This SPRP will be replaced, upon approval, if there are any significant changes to the activities outlined in the existing permits, which warrant changes to this SPRP. Minor changes will be submitted as an addendum to this SPRP and submitted to the distribution list as required.

1.1 Contact Details

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1.2 Purpose and Scope

The Ted, Turner, McAvoy, Gela Properties SPRP provides straightforward procedures for the storage and handling of hazardous materials for the purpose of reducing the risk of environmental contamination and to ensure the health and safety of all personnel from the accidental release of deleterious materials. If an accidental release does occur, the SPRP provides clear response procedures. The goals of this SPRP are to:

- Comply with all federal and territorial government regulations and guidelines pertaining to the preparation of a Spill Prevention and Response Plan and notification requirements in the event of a spill.
- Promote safe handling and use of potentially hazardous materials;
- Promote effective and safe recovery of spilled, potentially hazardous, materials;
- Reduce environmental impacts of spills;
- Identify responsibilities and reporting procedures for spill events;
- Provide site specific information about the facilities and contingencies in place;
- Provide readily accessible emergency information to clean-up crews, management, and government agencies.

1.3 Other Plans

This SPRP should be considered as a part of the Project-wide management system. Other management plans in place at the TTMG Project include:

- Fuel Management Plan (“FMP”)

1.4 Applicable Legislation and Guidelines

Acts, regulations, and guidelines that relate to environmental management and spill prevention and response in Nunavut include, but are not limited to:

Federal

- Canadian Environmental Protection Act
- Environment Canada's Environmental Emergency (E2) Regulations
- Implementation Guidelines for the Environmental Emergency Regulations
- Canadian Standards Association (CSA) Z1600-14 - Emergency and continuity management program
- National Oil Spill Preparedness and Response Regime
- National Energy Board requirements such as those in the Canada Oil and Gas Operations Act and Regulations and the Onshore Pipeline Regulations, 1999
- Environment Canada's Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations
- Environment Canada's Guidelines for the Preparation of Hazardous Material Spill Contingency Plans, 1990
- Fisheries Act
- Migratory Birds Convention Act
- Nunavut Waters and Nunavut Surface Rights Tribunal Act
- Transportation of Dangerous Goods Act
- Transportation of Dangerous Good Regulations
- National Fire Code of Canada
- Northern Land Use Guidelines
- Workplace Hazardous Materials Information System (“WHMIS”)
- CCME Environmental Codes of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products
- Guidelines for Spill Contingency Planning

Territorial

- Northwest Territories and Nunavut Spill Contingency Planning and Reporting Regulations
- Contingency Planning and Spill Reporting in Nunavut – A guide to the New Regulations
- Guideline for Industrial Waste Discharges in Nunavut
- Fire Prevention Act
- Environmental Protection Act
- Mine Health and Safety Act and Regulations
- Public Health Act
- Safety Act
- Nunavut Occupational Health and Safety Regulations
- Environmental Guideline for the General Management of Hazardous Waste

1.5 Project Description

The TTMG Properties are located on Crown land and Inuit Owned Land (“IOL”) in the Kitikmeot Region of Nunavut. The Properties are approximately 70 km southwest of Unmingmaktok and 70 km north-northeast Bathurst Inlet (Appendix A, Figure 1).

The Properties are comprised 11 noncontiguous mineral claims (13,450.5 ha) held 100% by Bathurst Metals Ltd. (Appendix A: Figures 2 through 4).

Past work on the Properties included prospecting, geological mapping, geochemical sampling, geophysical surveys and multi-hole diamond drilling program (Turner Property only). Bathurst does not currently have a camp permitted as Bathurst intends for the crews to stay at the Bathurst Inlet Lodge.

Bathurst proposes an exploration program including geochemical sampling and geological mapping in order to assess the mineral claims for economic mineralization that may warrant drilling. Ground based prospecting and sampling activities would commence in July once the land is free from snow and the Property surface is fully accessible.

All exploration activities will be based out of Bathurst Inlet Lodge. No camp will be constructed as the crew will use the facilities already in place at Bathurst Inlet Lodge.

2 Hazardous Materials On-Site

The following section details the products which are anticipated to be the most commonly used hazardous materials at the Project (Table 2). The list is subject to change based on product replacements, etc. Any changes will be reflected in future revisions of this plan. Material Safety Data Sheets (“MSDS”) for each of the hazardous materials listed in Table 2 as well as possible oils and greases and cleaning products are included in Appendix A.

2.1 Fuel

A fuel cache will be established proximal to Bathurst Inlet Lodge, primarily to store jet fuel, with smaller quantities of gasoline and propane. Chemicals and other hazardous materials will either be stored in the Bathurst Inlet Lodge (“BIL” or the “Lodge”) fuel cache or in another site next to the fuel cache.

The BIL fuel cache will contain 50 drums (10,250 L) of aviation fuel, a drum of gasoline and 2 cylinders (2,00 lb) of propane. Other hazardous materials found at the Bathurst main fuel cache may include small quantities of chemicals and various lubricants/oil/grease for operation and maintenance of motorized equipment, cleaning products, and waste oil.

Jet fuel and gasoline will be stored in 205 litre (L) steel drums. Any other chemicals and hazardous materials will be stored in their original containers. All hazardous materials will be clearly labeled in accordance with the Workplace Hazardous Materials Information System (“WHMIS”) and other applicable legislation. Labels will include, but not limited to, the type of fuel, safe handling procedures, reference to Material

Safety Data Sheets, company name, and the date of delivery to site. Signs with the same information, along with SDS/MSDS for each fuel type will be posted at each hazardous material storage or transfer site.

All fuels and other hazardous materials will be stored within “Arctic Insta-Berms”, or similar products, for secondary containment. These types of berms utilize chemical and fire-resistant fabric (generally polyurethane coated nylon or vinyl coated polyester material) designed for extreme arctic temperatures and puncture resistance. “RainDrain” or similar hydrocarbon filtration systems will be used to safely remove any water collected inside the berms, and as a safeguard against any potential overflows of contaminated water.

Fuel drums will be stored on their sides in organized rows with the bungs in the three o’clock and nine o’clock positions. Drums will be stood upright 1 to 2 days prior to use in order to allow any contaminants to settle. Daily visual inspections will be conducted to identify any damaged or leaking containers, the findings reported in the “Weekly Fuel Inspection Record” (Appendix B). If a leak is discovered, the substance will either be used immediately or transferred to an undamaged container.

The TTMG Project Field Supervisor is responsible for maintaining a detailed fuel and hazardous material inventory and is in responsible for overseeing the maintenance and monitoring of all fuel and hazardous material caches.

Table 1: Inventory of fuels stored during operations at Bathurst Inlet Lodge.

Material	Container	Proposed on Site
Jet Fuel (Jet A)	205 L Drum	50 Drums
Gasoline	205 L Drum	1 Drum
Propane	100 lb Cylinder	2 Cylinders

2.2 Other Hazardous Materials

Other hazardous materials which may be present at the Lodge include chemicals for cleaning, motor oil, antifreeze, and batteries. All hazardous materials will be stored in their original containers within the designated area in the hazardous materials cache.

2.2.1 Chemicals

Chemicals to be used on site may include household-strength cleaning supplies such as Javex, ammonia-based sprays, wash soaps, hand sanitizer, etc. In addition, limited miscellaneous items such as insect repellent and aerosols will be available. All items will be stored in their original containers in their respective storage/use areas and removed off-site with routine garbage backhauls, such as at crew change. All containers storing hazardous materials will be inspected for dents, punctures, etc. prior

to being transported. Extreme care will be taken in the process of transferring all chemicals/chemical solutions/fuels/etc. Funnels will be utilized to direct small amounts of liquid to reduce the potential of spillage. Spill mats will be in place when transferring/refueling.

2.2.2 Motor, Hydrologic and Gear Oils

These products will be used as crankcase oils in small equipment such as portable electrical generators and portable gas-powered rock saws. The containers will be stored at the designated helicopter landing area, outdoors on pallets, wrapped in polyethylene sheeting and tarped over or on spill containment pallets.

2.2.3 Lead Acid Batteries

Lead acid batteries may present on the engines for the electrical generator. In addition, a small number of batteries may be needed for other portable items. Spares will be maintained on site. For this project description, we have assumed that one spare lead acid battery will be kept at the lodge. Secondary containment measures are not contemplated given the small number of batteries in storage. At no time will any batteries be put in the garbage or incinerated.

3 Risk Assessment

Bathurst recognizes that there are several risks associated with the use, storage, and transfer of hazardous materials. The following summarizes a few potential risks that may be present at the TTMG Project.

3.1 Potential Spill Hazards

- Containers, such as 205 L steel drums, have the potential to leak or rupture due to mishandling,
- Older or refilled drums are more prone to leaking around the bungs if the seals are not properly maintained,
- Water and spills may collect in the secondary containment and overflow.
- Motorized equipment may experience fuel or oil leaks as a result of malfunctions, impacts, lack of maintenance, improper storage, or faulty operation.
- Leaks or spills may occur during fuel transfer due to over-fueling, improper fueling procedure, or faulty equipment.

3.2 Potential Environmental Impacts

All hazardous materials pose a threat to the environment if spilled. Overall, spills in the winter are usually lower impact as snow is a natural sorbent and ice forms a barrier against soil or water contamination. The following list outlines potential environmental impacts of hazardous materials stored on site:

- Gasoline may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Gasoline volatilizes quickly.

- Jet fuel may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Jet fuel volatilizes relatively quickly.
- Propane may be harmful to wildlife and the surrounding environment, and it has the potential to accumulate in the environment. Propane is extremely volatile and is the most flammable material stored on site. Impacts to the immediate surrounding environment are of greatest concern.
- Oils and greases may be harmful to wildlife and aquatic life. They are not readily biodegradable and have the potential for bioaccumulation in the environment.
- Drilling additives may be harmful to wildlife and aquatic life.

4 Preventative Measures

All fuels and other hazardous materials, as well as transfer areas, will be stored within “Arctic Insta-Berms”, or similar products, for secondary containment. This type of berm utilizes chemical and fire-resistant fabric (generally polyurethane coated nylon or vinyl coated polyester material) designed for extreme arctic temperatures and puncture resistance. “RainDrain” or a similar hydrocarbon filtration system will be used to safely remove any water collected inside the berm, and as a safeguard against any potential overflows of contaminated water. The storage area will be located a minimum distance of 31 m from the normal high water mark of any water body. Spill kits and firefighting equipment will be strategically located near where any hazardous materials are stored, used or transferred.

All hazardous materials will be clearly labeled in accordance with the Workplace Hazardous Materials Information System (WHMIS) and other applicable legislation. Labels will include, but not limited to, the type of material, safe handling procedures, reference to SDS/MSDS, company name, and the date of delivery to site. Signs with the same information, along with SDS/MSDS for each material type will be posted at each storage or transfer site. Additionally, “No Smoking” signs will be posted at all locations where hazardous materials are stored or transferred.

All fuel drums/tanks will be inspected before being transported to the Lodge. Monitoring of storage containers, fuel transfer equipment, and fuel caches will be ongoing during the exploration program. Inspections will be conducted on a regular and timely basis to identify any damaged or leaking containers, and the findings recorded. Any damage discovered during or as a result of transport will also be recorded. Any leaks or spills will be reported and contained as outlined in this document.

The Project Field Supervisor is responsible for supervising the monitoring and inspection program and keeping a detailed inventory of all fuel and other hazardous materials on site.

4.1 Fuel

Fuel drums will be stored on their sides in organized rows with the bungs in the three o'clock and nine o'clock positions. They will be stored in such a manner that they will not be susceptible to tipping over, rolling or otherwise being unstable. Drums will be stood upright 1 to 2 days prior to use to allow any contaminants to settle. Regular visual

inspections will be conducted to identify any damaged or leaking containers. In the event that a leak is discovered, the substance will either be used immediately or transferred to an undamaged container. Regular inspections and maintenance of motorized equipment will also be performed to avoid any fluid leaks onto the land.

Electric or hand wobble pumps equipped with filtration devices will be used for the transfer of diesel, jet fuel, and gasoline from their storage containers directly to their end-use fuel tanks. Portable drip trays or mini berms will be used to mitigate the risk of any spillage. Proper grounding procedures will always be used during fuel transfer while using an electric pump. Cigarette smoking, sparks, open flames, and any potential ignition sources are prohibited within 100 m of any fuel storage site and at all times during fuel transfer.

Any personnel who are required to handle or store fuel will receive appropriate training, including instruction in the operation and maintenance of fuel transfer and storage equipment. All on-site personnel will receive training as outlined in this document.

4.2 Propane

Propane will be stored in appropriate, certified containers. Propane cylinders will be inspected and monitored on a regular basis for any signs of deterioration or corrosion. Containers will be secured and fastened in an upright position to ensure there is no risk of damage to the regulator in the event of a fall.

Propane cylinders will be equipped with a pressure release valve that opens to prevent a buildup of excessive internal pressure. Labels, showing data such as date of manufacture and re-testing dates, will be applied to the collar of the cylinders. Propane is non-toxic and will not contaminate soil; therefore, secondary containment berms are not required for storage. All propane cylinders will be secured for safety and stored away from any sources of ignition.

4.3 Chemicals

Containers and packages of chemicals will be placed in the hazardous materials cache within secondary containment and may also be on pallets, wrapped in polyethylene sheeting and tarped over. Immediately prior to use, bags or containers of chemicals will be transported to the drill site. Appropriate spill kits, including empty containers/drums for contaminated soil, will be kept on hand to clean up any product spilled.

Chemicals will generally be transferred directly to the end use machinery from the containers that the products were provided in. Considering the nature of the operations, generally less than 20 L of product will be transferred at a time. For any solid products, the bags will be opened directly over the intended use tanks into which the product will be placed. Used chemical products will be returned to empty containers and stored for shipment off-site. Used motor oil will be accumulated in sealed, labeled 20 L pails for shipment off-site.

4.4 Battery Acid

All batteries will be protected from damage by fastening them into the space designed for them when used with various power equipment and stored safely within appropriate secondary containment when not in use.

4.5 Transportation of Fuel and Other Hazardous Materials to Site

Fuel and other hazardous materials will be brought to site from Yellowknife via fixed wing aircraft to the marine Port facility operated by Sabina Gold and Silver and then slung by helicopter from Port to the fuel containment area at Bathurst Inlet Lodge.

Prior to transport to site all fuel drums, tanks or other containers will be inspected to identify any defects (i.e. torn, missing, or twisted gaskets, punctures, etc.). A second inspection will be performed upon arrival at the lodge. Regulations outlined in the Transportation of Dangerous Goods Act, and other relevant legislation, will be observed at all times during transport. Empty drums will be removed from site for proper disposal or refill in Yellowknife.

5 Resource Inventory

Spill kits and firefighting equipment will be strategically located near where any hazardous materials are used, stored, or transferred, including Bathurst Inlet Lodge, remote fuel caches and in the helicopter.

5.1 Spill kits

Spill kits will be in bright yellow 231 L rigid plastic containers and will contain at a minimum:

- 100 oil sorbent pads
- 6 small pillows
- 2 large pillows
- 2 3"x4' socks
- 5 3"x8' socks
- 2 4' socks
- 1 25 lb. bag granular
- 2 pair splash goggles
- 2 poly coated Tyvek suits
- 2 disposable respirators
- 10 large bags with ties for temporary use
- 2 large tarps
- 1 collapsible shovel
- 1 roll duct tape
- 1 utility knife
- 2 spill kit labels
- 1 laminated copy of the Kahuna Gold Property Spill Prevention and Response Plan
- 1 231 L overpack drum
- 1 checklist of required items

5.2 Other Equipment

Other equipment on-site may include:

- 2 38"x144' rolls absorbent matting
- 160 16"x20" enviro matting
- 8 booms
- 3 large tarps
- 3 shovels (minimum)
- 3 pickaxes (minimum)
- 3 rakes (minimum)
- 3 empty 205 L drums (minimum)

5.3 Fire Extinguishers

Appropriate fire extinguishers and other firefighting equipment will be strategically located near where any hazardous materials are used, stored, or transferred, including at Bathurst Inlet Lodge, fuel caches and in the helicopter.

6 Training

6.1 Employees and other on-site personnel

All on-site personnel will undergo an orientation and training program on initial spill response procedures and be familiar with spill reporting requirements. Fuel handling personnel will receive additional training in safe operation of fuel transfer equipment, spill prevention techniques and spill response. The Bathurst Project Field Supervisor will keep detailed training records.

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

- Review of the Bathurst Metals Ltd. FMP, SPRP and ERP
- Location of fuel and chemical storage sites.
- Causes and possible effects of spills.
- Use of on and off-site spill response resources and contact lists.
- Exercises in spill response and spill kit use.

All exploration personnel are required to have basic training in first aid, and some may also require WHMIS, and Transportation of Dangerous Goods ("TDG"). Supervisors are required to have advanced first aid training, as well as a valid Occupational Health and Safety ("OHS") Supervisor's Certificate.

If required, a designated Emergency Response Team ("ERT") made up of on-site personnel may be established. Members of the ERT will receive comprehensive and ongoing training in emergency spill response. ERT members will be always on-site and will be made aware of the available resources and locations of spill kits.

6.2 Contractors

All contractors will complete site-specific health and safety training including, but not limited to WHMIS, TDG, and OSH training.

7 Response Organization

In the case of a spill or other environmental emergency, an immediate, safe, and environmentally responsible reaction is required. An immediately reportable spill is defined as a release of a substance that is likely to be an imminent environmental or human health hazard or meets or exceeds the threshold volumes outlined in Appendix B “*Immediately Reportable Spill Quantities*.” It must be reported to the Nunavut 24-Hour Spill Report Line at 1-867-920-8130.

7.1 Basic Steps

The basic steps of the TTMG Properties Spill Response Plan are as follows:

1. **Assess** safety hazards and risks.
2. **Ensure** the safety of all persons at all times.
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 Bathurst Project Field Supervisor.
8. **Request** assistance (if required).
9. **Implement** any necessary cleanup/remedial action.
10. **Photograph** if and where possible, during and after cleanup.

7.2 Chain of Command

1. **Bathurst Project Field Supervisor(s)**.
2. **NT/NU 24 Hour Spill Report Line** at 867-920-8130 (Fax: 867-873-6924).
 - a. Before or after contacting the 24-Hour Spill Report Line, a Spill Report Form (Appendix C) is to be filled out.
3. **Any other agencies** as instructed by the NT/NU 24 Hour Spill Report Line and the INAC in Nunavut at 1-800-567-9604, the Manager of Field Operations at 867-975-4295, and Environment Canada at 867-920-8130.
4. **KIA** at (867) 645 5725, if on IOL.

8 Containment Procedures

The following list outlines the containment procedures for hazardous materials spilled on site:

- Ensure it is safe to initiate containment procedures.
- Always use applicable personal protective equipment (“PPE,” i.e., gloves, goggles/safety glasses, masks/respirators, etc.) and other safety equipment before attempting to contain a spill.
- Initiate spill containment by first determining what will be affected by the spill.
- Assess speed and direction of the spill and the cause of movement (water, wind, slope).
- Determine the best location for containing the spill, avoiding water bodies.
- Have a contingency plan ready in case spill worsens beyond control or if other factors impede containment efforts.

8.1 Containment of Hazardous Fluid Spills

8.1.1 Containment of Spills on Land

Spills on land include spills on rock, gravel, soil and/or vegetation. It is important to note that soil is a natural sorbent, thus spills on soil are generally less serious than spills on water as contaminated soil can be more easily recovered. Generally, spills on land occur during the late spring, summer, or fall when snow cover is at a minimum. It is important that all measures be undertaken to avoid spills reaching open water bodies.

Dykes

Dykes can be created using soil surrounding a spill on land. These dykes are constructed around the perimeter or down slope of the spilled fuel. A dyke needs to be built up to a size that will ensure containment of the maximum quantity of fuel that may reach it. A plastic tarp can be placed on and at the base of the dyke such that fuel can pool up and subsequently be removed with sorbent materials or by pump into barrels or bags. If the spill is migrating very slowly a dyke may not be necessary and sorbents can be used to soak up fuels before they migrate away from the source of the spill.

Trenches

Trenches can be dug out to contain spills if the top layer of soil is thawed. Shovels pickaxes or a loader can be used depending on the size of trench required. It is recommended that the trench be dug to the bedrock or permafrost, which will then provide containment layer for the spilled fuel. Fuel can then be recovered using a pump or sorbent materials.

8.1.2 Containment of Spills on Water

Spills on water such as rivers, streams or lakes are the most serious types of spills as they can negatively impact water quality and aquatic life. All measures need to be undertaken to contain spills on open water.

Booms

Booms are commonly used to recover fuel floating on the surface of lakes or slow-moving streams. They are released from the shore of a water body to create a circle around the spill. If the spill is away from the shoreline a boat will need to be used to reach the spill, then the boom can be set out. More than one boom may be used at once. Booms may also be used in streams and should be set out at an angle to the current. Booms are designed to float and have sorbent materials built into them to absorb fuels at the edge of the boom. Fuel contained within the circle of the boom will need to be recovered using sorbent materials or pumps and placed into barrels or bags for disposal.

Weirs

Weirs can be used to contain spills in streams and to prevent further migration downstream. Plywood or other materials found on site can be placed into and across the width of the stream, such that water may still flow under the weir. Spilled fuel will float on

the water surface and be contained at the foot of the weir. It can then be removed using sorbents, booms or pumps and placed into barrels or plastic bags.

Barriers

In some situations, barriers made of netting or fence material can be installed across a stream, and sorbent materials placed at the base to absorb spilled fuel. Sorbents will need to be replaced as soon as they are saturated. Water will be allowed to flow through. This is very similar to the weir option discussed above.

Burning

In some cases, it may be appropriate to burn fuel or to let volatile fuels such as gasoline evaporate after containment on the water surface. This should only be undertaken in consultation with, and after approval from the CIRNAC or KIA (if on IOL) Inspector.

8.1.3 Containment of Spills on Ice

Spills on ice are generally the easiest spills to contain due to the predominantly impermeable nature of the ice. For small spills, sorbent materials are used to soak up spilled fuel. Remaining contaminated ice/ slush can be scraped and shoveled into a plastic bag or barrel. However, all possible attempts should be made to prevent spills from entering ice covered waters as no easy method exists for containment and recovery of spills if they seep under ice.

Dykes

Dykes can be used to contain fuel spills on ice. By collecting surrounding snow, compacting it, and mounding it to form a dyke down slope of the spill, a barrier is created thus helping to contain the spill. If the quantity of spill is large, a plastic tarp can be placed over the dyke such that the spill pools at the base of the dyke. The collected fuel can then be pumped into barrels or collected with sorbent materials.

Trenches

For significant spills on ice, trenches can be cut into the ice surrounding and/or down slope of the spill such that fuel is allowed to pool in the trench. It can then be removed via pump into barrels, collected with sorbent materials, or mixed with snow and shoveled into barrels or bags.

Burning

Burning should only be considered if other approaches are not feasible and is only to be undertaken with the permission of the CIRNAC or KIA (if on IOL) Inspector.

8.1.4 Containment of Spills on Snow

Snow is a natural sorbent, thus as with spills on soil, spilled fuel can be more easily recovered. Generally, small spills on snow can be easily cleaned up by raking and shoveling the contaminated snow into plastic bags or empty barrels and storing these at an approved location.

Dykes

Dykes can be used to contain fuel spills on snow. By compacting snow down slope from the spill, and mounding it to form a dyke, a barrier or berm is created thus helping to contain the spill. If the quantity of spill is large, a plastic tarp can be placed over the dyke such that the spill pools at the base of the dyke. The collected fuel/snow mixture can then be shoveled into barrels or bags or collected with sorbent materials.

8.1.5 Storage, Transfer and Disposal

In most cases, spill cleanups are initiated at the far end of the spill and contained moving toward the centre of the spill. Sorbent socks and pads are generally used for small spill clean-up. A pump with attached fuel transfer hose can suction spills from leaking containers or large accumulations on land or ice and direct these larger quantities into empty drums. Hand tools such as cans, shovels, and rakes are also very effective for small spills or hard to reach areas. Heavy equipment can be used if deemed necessary and given space and time constraints.

Used sorbent materials are to be immediately placed in plastic bags, and later in sealed containers for future disposal. All materials mentioned in this section are available in the spill kits located at camp, drill sites and fuel caches. Following clean up, any tools or equipment used will be properly washed and decontaminated or replaced if this is not possible.

All contaminated soil, water, ice, snow, and supplies used for clean-up will be stored in sealed, labeled containers and removed from site for proper disposal at an approved facility. The movement of hazardous wastes will be monitored by the Nunavut Department of Environment and tracked with a Waste Manifest during all movements and transfers.

8.2 Containment of Propane Spills

It is not possible to contain vapors when released. Water spray can be used to knock down vapors if no chance of ignition exists. Personnel should leave the area immediately unless a small leak is stopped immediately following detection. Personnel should avoid touching release points on damaged containers as frost may form rapidly. If tanks are damaged, do not attempt a recovery – allow gas to disperse. Keep clear of tank ends. Small fires can be extinguished with a dry chemical CO₂ fire extinguisher.

Contaminated materials and damaged containers will be sent to an approved facility for disposal.

8.3 Containment of Chemical Spills

- Identify the spilled material, if possible.
- REFER TO SDS/MSDS.
- Assess hazard of spilled material.
- Members of the emergency response team who are vulnerable to certain contaminants should be replaced with alternatives (e.g., Asthmatics where fumes or airborne particles are evident).
- Assemble applicable PPE (i.e., gloves, goggles/safety glasses, masks/respirators, etc.) and other safety equipment before responding to a spill.

- Apply absorbents to soak up liquids.
- Solid chemicals such as dusts or powders should be covered with plastic sheeting to prevent disbursement by wind or animal.
- Neutralize acids or caustics. Place spilled material and contaminated clean-up supplies in empty refuge drums and seal for disposal.
- Contact the NT/NU 24 Hour Spill Report Line.
- Proceed with clean-up in correspondence with the SDS/MSDS.

The Bathurst Project Field Supervisor is responsible for maintaining a detailed inventory of all Bathurst fuel and other hazardous materials, including waste. The Bathurst Project Field Supervisor will track all movement and transfer of Bathurst hazardous materials, including wastes, with appropriately detailed logs. A Hazardous Waste Manifest will be completed and will accompany all shipments of hazardous waste. Copies of the Hazardous Waste Manifests will also be kept with Bathurst Project Field Supervisor.

Figure 1. Ted, Turner, McAvoy and Gela Properties Locations

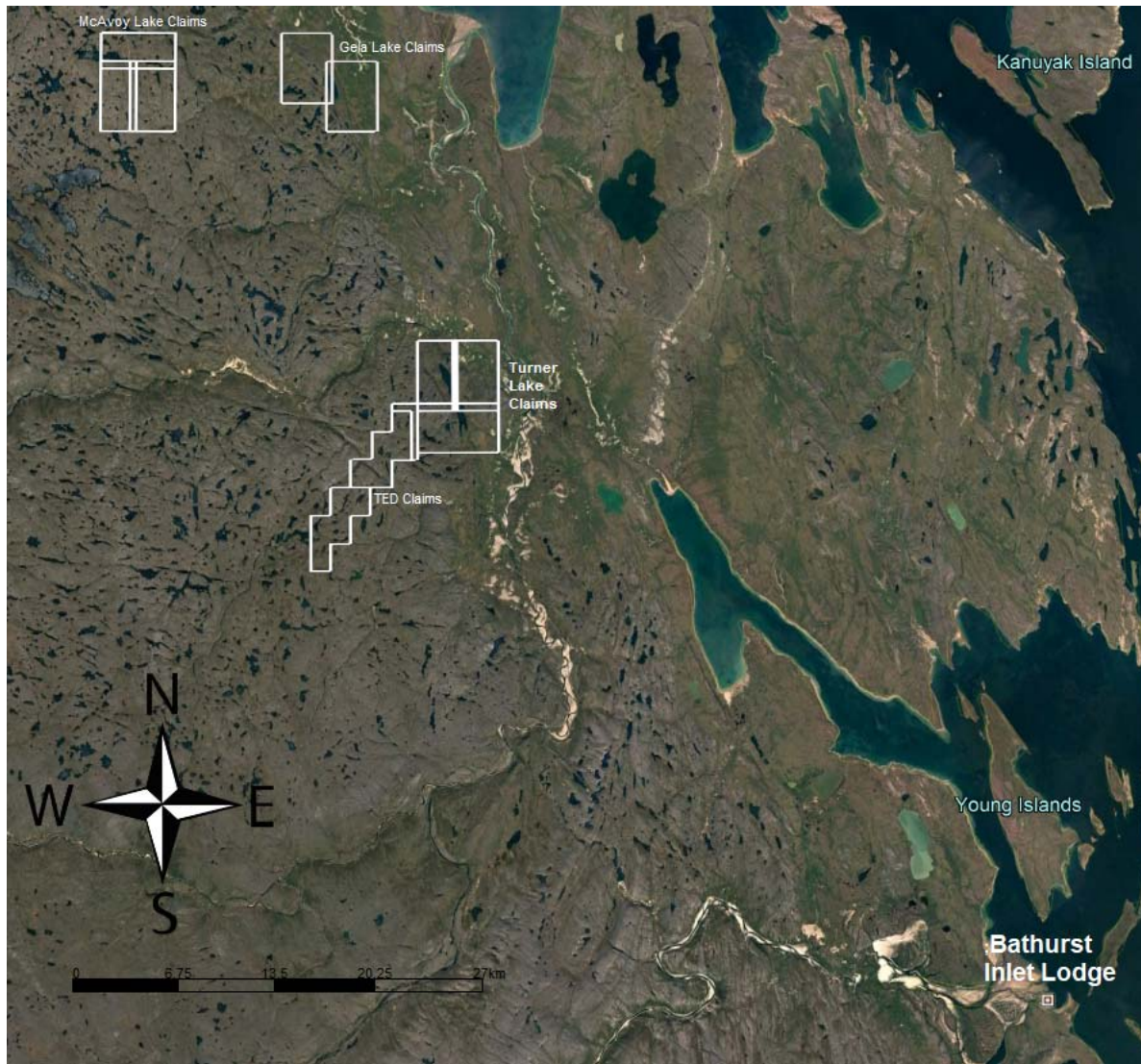


Figure 2. Ted and Turner Mineral Tenures.

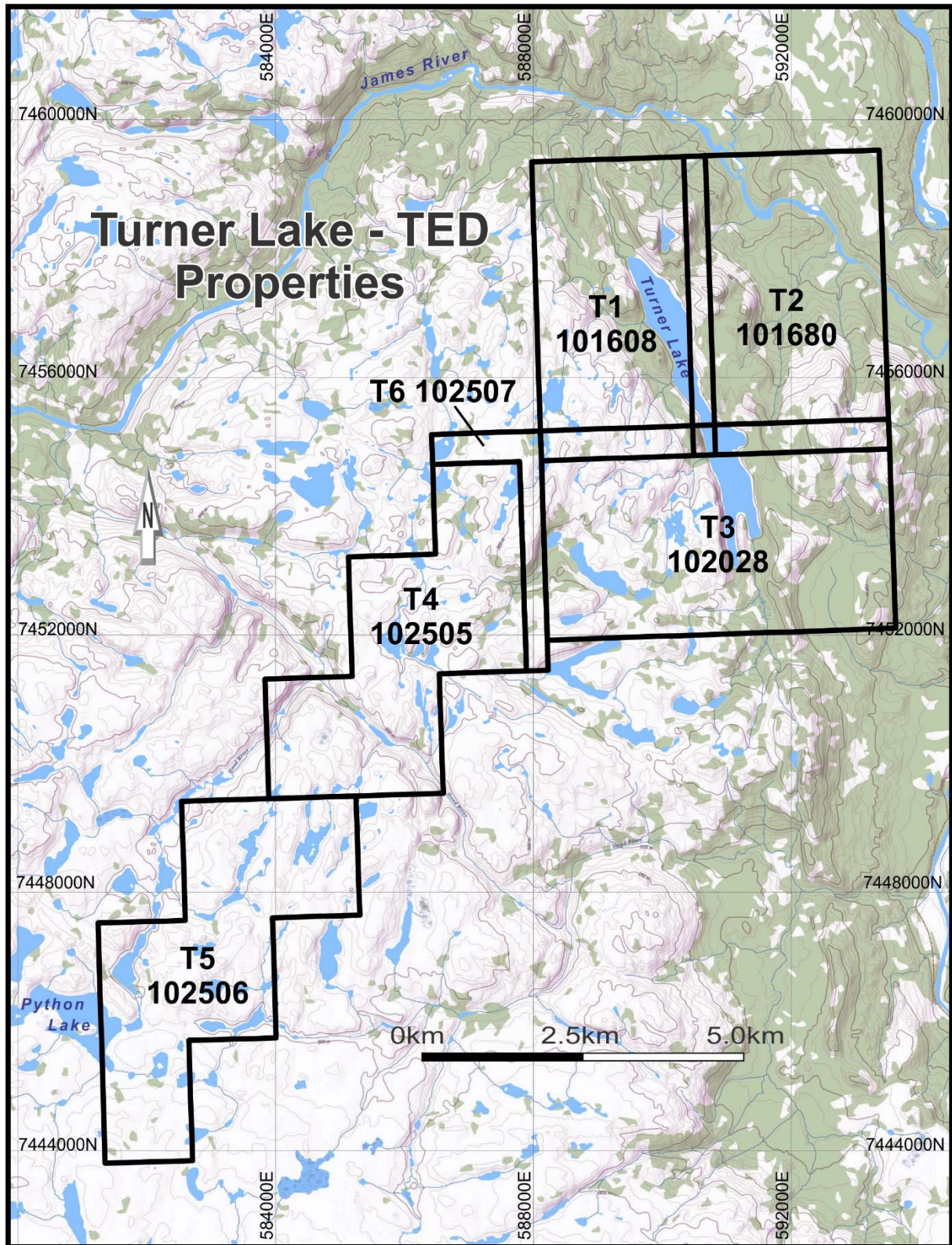


Figure 3. Gela Mineral Tenures

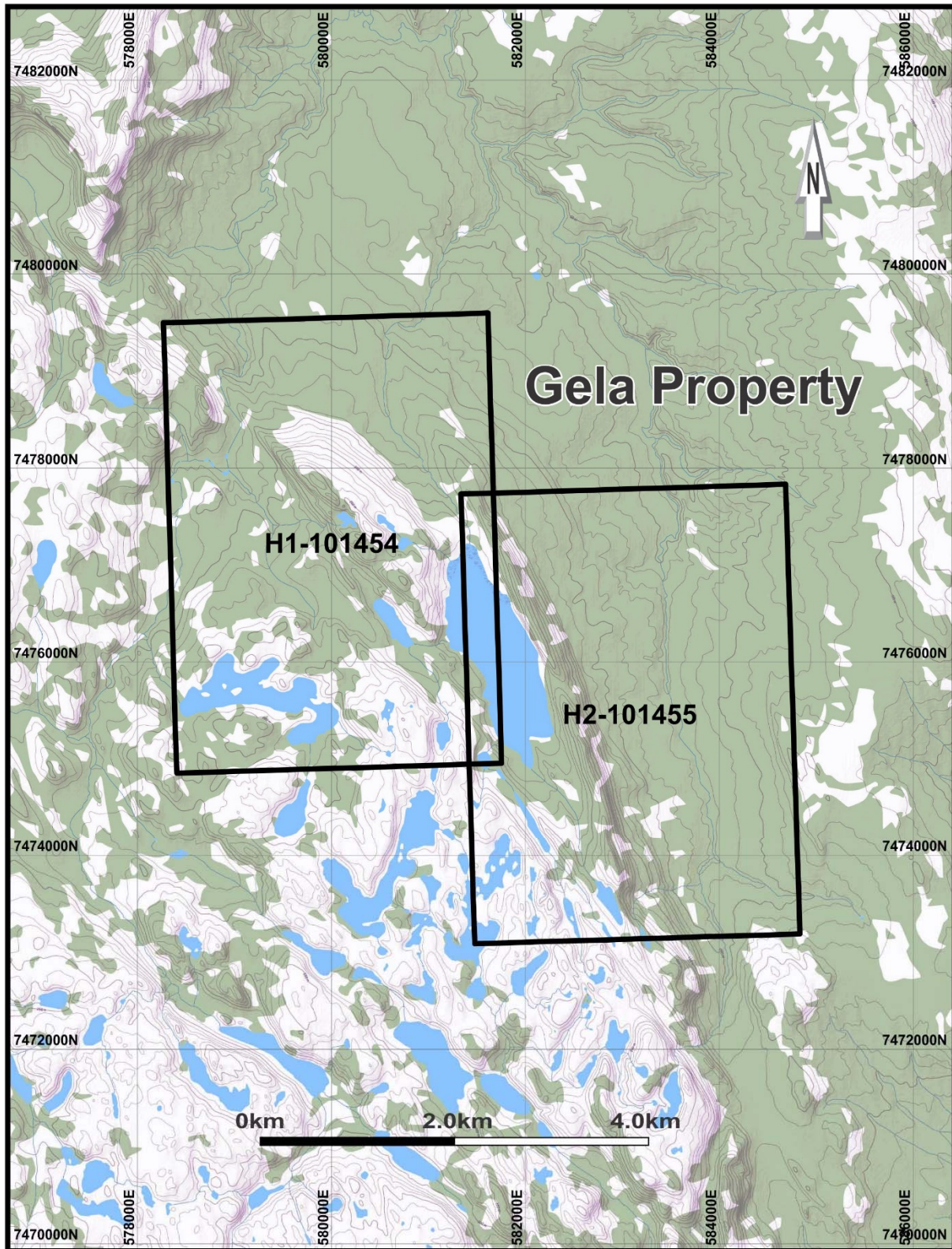
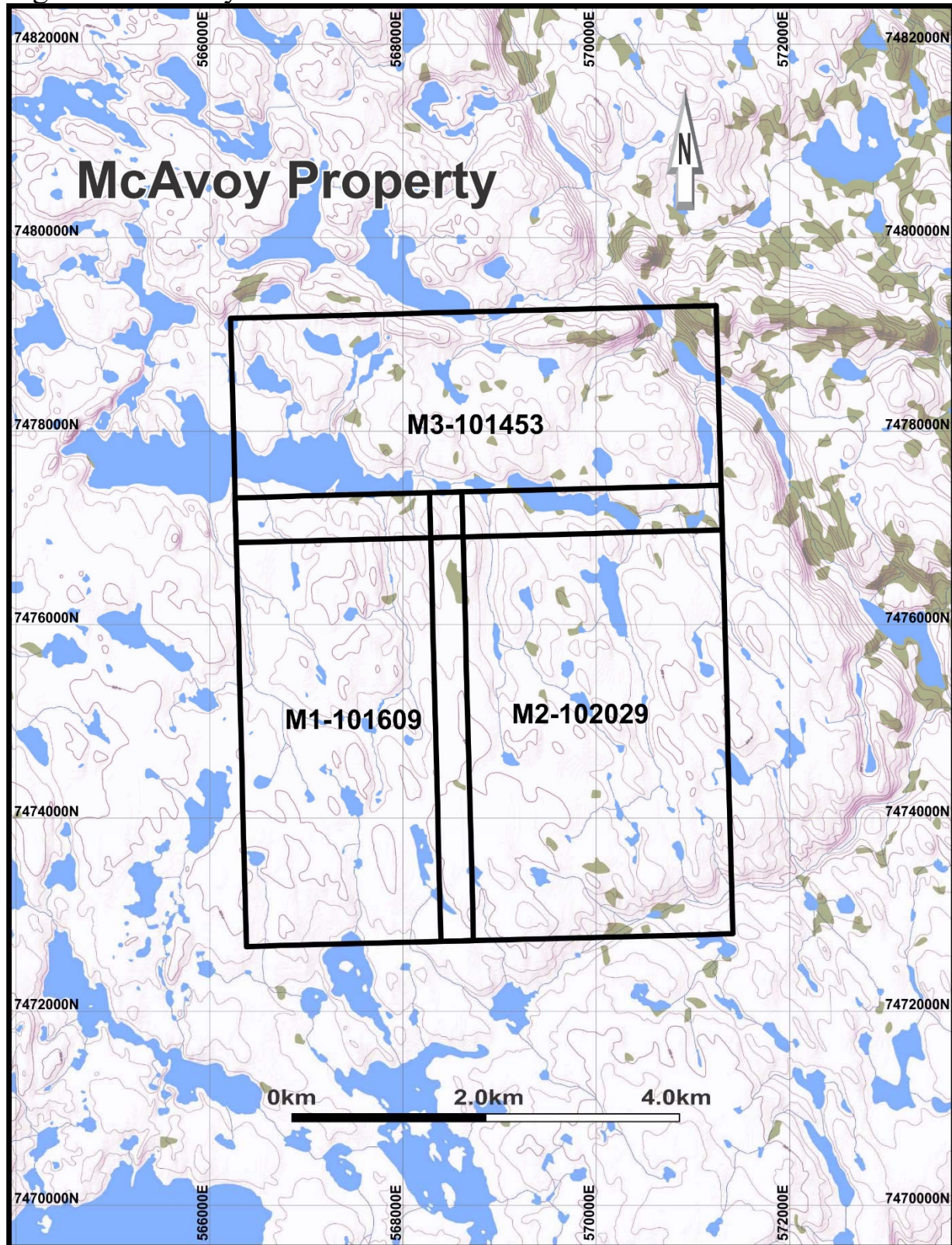


Figure 4. McAvoy Mineral Tenures



Appendix A – SDS/MSDS

MATERIAL SAFETY DATA SHEET
LEAD ACID BATTERY WET, FILLED WITH
ACID
(US, CN, EU Version for International Trade)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Lead Acid Battery Wet, Filled With Acid
OTHER PRODUCT NAMES: Electric Storage Battery, SLI or Industrial Battery, UN2794

MANUFACTURER: East Penn Manufacturing Company, Inc.
DIVISION: Dekal Road
ADDRESS: Lyon Station, PA 19536 USA

EMERGENCY TELEPHONE NUMBERS: US: CHEMTREC 1-800-424-9300
CN: CHEMTREC 1-800-424-9300
Outside US: 1-703-527-3887

NON-EMERGENCY HEALTH/SAFETY INFORMATION: 1-610-682-6361

CHEMICAL FAMILY: This product is a wet lead acid storage battery. May also include gel/absorbed electrolyte type lead acid battery types.

PRODUCT USE: Industrial/Commercial electrical storage batteries.

This product is considered a Hazardous Substance, Preparation or Article that is regulated under US-OSHA; CAN-WHMIS; IOSH; ISO; UK-CHIP; or EU Directives (67/548/EEC-Dangerous Substance Labelling, 98/24/EC-Chemical Agents at Work, 99/45/EC-Preparation Labelling, 2001/58/EC-MSDS Content, and 1907/2006/EC-REACH), and an MSDS/SDS is required for this product considering that when used as recommended or intended, or under ordinary conditions, it may present a health and safety exposure or other hazard.

Additional Information

This product may not be compatible with all environments, such as those containing liquid solvents or extreme temperature or pressure. Please request information if considering use under extreme conditions or use beyond current product labelling.

SECTION 2: HAZARDS IDENTIFICATION

GHS Classification:

Health	Environmental	Physical
Acute Toxicity – Not listed (NL) Eye Corrosion – Corrosive* Skin Corrosion – Corrosive* Skin Sensitization – NL Mutagenicity/Carcinogenicity – NL Reproductive/Developmental – NL Target Organ Toxicity (Repeated) – NL	Aquatic Toxicity – NL	NFPA – Flammable gas, hydrogen (during charging) CN - NL EU - NL

*as sulfuric acid

GHS Label: Lead Acid Battery, Wet

Symbols: C (Corrosive)



Hazard Statements

Contact with internal components may cause irritation of severe burns. Irritating to eyes, respiratory system, and skin.

Precautionary Statements

Keep out of reach of children. Keep containers tightly closed. Avoid heat, sparks, and open flame while charging batteries. Avoid contact with internal acid.

EMERGENCY OVERVIEW: May form explosive air/gas mixture during charging. Contact with internal components may cause irritation or severe burns. Irritating to eyes, respiratory system, and skin. Prolonged inhalation or ingestion may result in serious damage to health. Pregnant

MATERIAL SAFETY DATA SHEET

LEAD ACID BATTERY WET, FILLED WITH ACID

(US, CN, EU Version for International Trade)

women exposed to internal components may experience reproductive/developmental effects.

POTENTIAL HEALTH EFFECTS:

EYES: Direct contact of internal electrolyte liquid with eyes may cause severe burns or blindness.
SKIN: Direct contact of internal electrolyte liquid with the skin may cause skin irritation or damaging burns.
INGESTION: Swallowing this product may cause severe burns to the esophagus and digestive tract and harmful or fatal lead poisoning. Lead ingestion may cause nausea, vomiting, weight loss, abdominal spasms, fatigue, and pain in the arms, legs and joints.
INHALATION: Respiratory tract irritation and possible long-term effects.

ACUTE HEALTH HAZARDS:

Repeated or prolonged contact may cause mild skin irritation.

CHRONIC HEALTH HAZARDS:

Lead poisoning if persons are exposed to internal components of the batteries. Lead absorption may cause nausea, vomiting, weight loss, abdominal spasms, fatigue, and pain in the arms, legs and joints. Other effects may include central nervous system damage, kidney dysfunction, and potential reproductive effects. Chronic inhalation of sulfuric acid mist may increase the risk of lung cancer.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Respiratory and skin diseases may predispose the user to acute and chronic effects of sulfuric acid and/or lead. Children and pregnant women must be protected from lead exposure. Persons with kidney disease may be at increased risk of kidney failure.

Additional Information

No health effects are expected related to normal use of this product as sold.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS (Chemical/Common Names):	CAS No.:	% by Wt:	EC No.:
Lead, inorganic	7439-92-1	43-70 (average: 65)	231-100-4
Sulfuric acid	7664-93-9	20-44 (average: 25)	231-639-5
Antimony	7440-36-0	0-4 (average: 1)	231-146-5
Arsenic	7440-38-2	<0.01	231-148-6
Polypropylene	9003-07-0	5-10 (average: 8)	NA
NA: Not applicable; ND: Not determined			

Additional Information

These ingredients reflect components of the finished product related to performance of the product as distributed into commerce.

SECTION 4: FIRST AID MEASURES

EYE CONTACT: Flush eyes with large amounts of water for at least 15 minutes. Seek immediate medical attention if eyes have been exposed directly to acid.
SKIN CONTACT: Flush affected area(s) with large amounts of water using deluge emergency shower, if available, shower for at least 15 minutes. Remove contaminated clothing. If symptoms persist, seek medical attention.
INGESTION: If swallowed, give large amounts of water. Do NOT induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death.
INHALATION: If breathing difficulties develop, remove person to fresh air. If symptoms persist, seek medical attention.

SECTION 5: FIRE-FIGHTING MEASURES

SUITABLE/UNSUITABLE EXTINGUISHING MEDIA:

Dry chemical, carbon dioxide, water, foam. Do not use water on live electrical circuits.

MATERIAL SAFETY DATA SHEET

LEAD ACID BATTERY WET, FILLED WITH ACID

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SPECIAL FIREFIGHTING PROCEDURES & PROTECTIVE EQUIPMENT:

Use appropriate media for surrounding fire. Do not use carbon dioxide directly on cells. Avoid breathing vapours. Use full protective equipment (bunker gear) and self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Batteries evolve flammable hydrogen gas during charging and may increase fire risk in poorly ventilated areas near sparks, excessive heat or open flames.

SPECIFIC HAZARDS IN CASE OF FIRE:

Thermal shock may cause battery case to crack open. Containers may explode when heated.

Additional Information

Firefighting water runoff and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Avoid Contact with Skin. Neutralize any spilled electrolyte with neutralizing agents, such as soda ash, sodium bicarbonate, or very dilute sodium hydroxide solutions.

ENVIRONMENTAL PRECAUTIONS:

Prevent spilled material from entering sewers and waterways.

SPILL CONTAINMENT & CLEANUP METHODS/MATERIALS:

Add neutralizer/absorbent to spill area. Sweep or shovel spilled material and absorbent and place in approved container. Dispose of any non-recyclable materials in accordance with local, state, provincial or federal regulations.

Additional Information

Lead acid batteries and their plastic cases are recyclable. Contact your East Penn representative for recycling information.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING AND STORAGE:

- Keep containers tightly closed when not in use.
- If battery case is broken, avoid contact with internal components.
- Do not handle near heat, sparks, or open flames.
- Protect containers from physical damage to avoid leaks and spills.
- Place cardboard between layers of stacked batteries to avoid damage and short circuits.
- Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire.

OTHER PRECAUTIONS (e.g.; Incompatibilities):

Keep away from combustible materials, organic chemicals, reducing substances, metals, strong oxidizers and water.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS/SYSTEM DESIGN INFORMATION:

Charge in areas with adequate ventilation.

VENTILATION:

General dilution ventilation is acceptable.

RESPIRATORY PROTECTION:

Not required for normal conditions of use. See also special firefighting procedures (Section 5).

EYE PROTECTION:

Wear protective glasses with side shields or goggles.

SKIN PROTECTION:

Wear chemical resistant gloves as a standard procedure to prevent skin contact.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Chemically impervious apron and face shield recommended when adding water or electrolyte to batteries.

Wash Hands after handling.

EXPOSURE GUIDELINES & LIMITS:

OSHA	Permissible Exposure Limit (PEL/TWA)	Lead, inorganic (as Pb)	0.05 mg/m ³
		Sulfuric acid	1.00 mg/m ³

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LEAD ACID BATTERY WET, FILLED WITH ACID

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EXPOSURE GUIDELINES & LIMITS:

ACGIH	2007 Threshold Limit Value (TLV)	Antimony	0.50 mg/m ³			
		Arsenic	0.01 mg/m ³			
		Lead, inorganic (as Pb)	0.05 mg/m ³			
		Sulfuric acid	0.20 mg/m ³			
		Antimony	0.50 mg/m ³			
Quebec	Permissible Exposure Value (PEV)	Arsenic	0.01 mg/m ³			
		Lead, inorganic (as Pb)	0.15 mg/m ³			
		Sulfuric acid	1.00 mg/m ³	TWA		
			3.00 mg/m ³	STEV		
		Antimony	0.50 mg/m ³			
Ontario	Occupational Exposure Level (OEL)	Arsenic	0.10 mg/m ³			
		Lead (designated substance)	0.10 mg/m ³			
		Sulfuric acid	1.00 mg/m ³	TWAEV		
			3.00 mg/m ³	STEV		
		Antimony	0.50 mg/m ³			
Netherlands	Maximaal Aanvaarde Concentratie (MAC)	Arsenic (designated substance)	0.01 mg/m ³			
		Lead, inorganic (as Pb)	0.15 mg/m ³			
		Sulfuric acid	1.00 mg/m ³			
		Germany	Maximale Arbeitsplatzkonzentrationen (MAK)	Lead, inorganic (as Pb)	0.10 mg/m ³	
		Sulfuric acid		1.00 mg/m ³	TWA	
			2.00 mg/m ³	STEV		
United Kingdom	Occupational Exposure Standard (OES)	Antimony	0.50 mg/m ³			
		Lead	0.15 mg/m ³			
		Antimony	0.50 mg/m ³			
		Arsenic	0.10 mg/m ³			

TWA: 8-Hour Time-Weighted Average; STE: Short-Term Exposure; mg/m³: milligrams per cubic meter of air; NE: Not Established; STEV: Short-Term Exposure Value; TWAEV: Time-Weighted Average Exposure Value; STEL: Short-Term Exposure Limit

Additional Information

- Batteries are housed in polypropylene cases which are regulated as total dust or respirable dust only when they are ground up during recycling. The OSHA PEL for dust is 15 mg/m³ as total dust or 5 mg/m³ as respirable dust.
- May be required to meet Domestic Requirements for a Specific Destination(s).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Industrial/commercial lead acid battery
ODOUR:	Odourless
ODOUR THRESHOLD:	NA
PHYSICAL STATE:	Sulfuric Acid: Liquid; Lead: solid
pH:	<1
BOILING POINT:	235-240° F (113-116° C) (as sulfuric acid)
MELTING POINT:	NA
FREEZING POINT:	NA
VAPOUR PRESSURE:	10 mmHg
VAPOUR DENSITY (AIR = 1):	> 1
SPECIFIC GRAVITY (H₂O = 1):	1.27-1.33
EVAPORATION RATE (n-BuAc=1):	< 1
SOLUBILITY IN WATER:	100% (as sulfuric acid)
FLASH POINT:	Below room temperature (as hydrogen gas)
AUTO-IGNITION TEMPERATURE:	NA
LOWER EXPLOSIVE LIMIT (LEL):	4% (as hydrogen gas)
UPPER EXPLOSIVE LIMIT (UEL):	74% (as hydrogen gas)
PARTITION COEFFICIENT:	NA
VISCOSITY (poise @ 25° C):	Not Available

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DECOMPOSITION TEMPERATURE: Not Available

FLAMMABILITY/HMIS HAZARD CLASSIFICATIONS (US/CN/EU): As sulfuric acid

HEALTH: 3 FLAMMABILITY: 0 REACTIVITY: 2

SECTION 10: STABILITY AND REACTIVITY

STABILITY: This product is stable under normal conditions at ambient temperature.
INCOMPATIBILITY (MATERIAL TO AVOID): Strong bases, combustible organic materials, reducing agents, finely divided metals, strong oxidizers, and water.
HAZARDOUS DECOMPOSITION BY-PRODUCTS: Thermal decomposition will produce sulfur dioxide, sulfur trioxide, carbon monoxide, sulfuric acid mist, and hydrogen.
HAZARDOUS POLYMERIZATION: Will not occur
CONDITIONS TO AVOID: Overcharging, sources of ignition

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY (Test Results Basis and Comments):

Sulfuric acid: LD50, Rat: 2140 mg/kg
LC50, Guinea pig: 510 mg/m³

Lead: No data available for elemental lead

SUBCHRONIC/CHRONIC TOXICITY (Test Results and Comments):

Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50 µg/100 ml or higher. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

Additional Information

- Very little chronic toxicity data available for elemental lead.
- Lead is listed by IARC as a 2B carcinogen: possible carcinogen in humans. Arsenic is listed by IARC, ACGIH, and NTP as a carcinogen, based on studies with high doses over long periods of time. The other ingredients in this product, present at equal to or greater than 0,1% of the product, are not listed by OSHA, NTP, or IARC as suspect carcinogens.
- The 19th Amendment to EC Directive 67/548/EEC classified lead compounds, but not lead in metal form, as possibly toxic to reproduction. Risk phrase 61: May cause harm to the unborn child, applies to lead compounds, especially soluble forms.

SECTION 12: ECOLOGICAL INFORMATION

PERSISTENCE & DEGRADABILITY:

Lead is very persistent in soils and sediments. No data available on biodegradation.

BIOACCUMULATIVE POTENTIAL (Including Mobility):

Mobility of metallic lead between ecological compartments is low. Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but very little bioaccumulation occurs through the food chain. Most studies have included lead compounds, not solid inorganic lead.

AQUATIC TOXICITY (Test Results & Comments):

Sulfuric acid: 24-hour LC50, fresh water fish (*Brachydanio rerio*): 82 mg/l
96-hour LOEC, fresh water fish (*Cyprinus carpio*): 22 mg/l (lowest observable effect concentration)

Lead (metal): No data available

Additional Information

- No known effects on stratospheric ozone depletion.
- Volatile organic compounds: 0% (by Volume)
- Water Endangering Class (WGK): NA

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

Following local, State/Provincial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.

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HAZARDOUS WASTE

CLASS/CODE:

US - Not applicable to finished product as manufactured for distribution into commerce.
 CN – Not applicable to finished product as manufactured for distribution into commerce.
 EWC – Not applicable to finished product as manufactured for distribution into commerce.

Additional Information
Not Included – Recycle or dispose as allowed by local jurisdiction for the end-of-life characteristics as-disposed.

SECTION 14: TRANSPORT INFORMATION
--

GROUND – US-DOT/CAN-TDG/EU-ADR/APEC-ADR:

Proper Shipping Name	Batteries, Wet, Filled with Acid	ID Number	UN2794
Hazard Class	8	Labels	Corrosive
Packing Group	III		

AIRCRAFT – ICAO-IATA:

Proper Shipping Name	Batteries, Wet, Filled with Acid	ID Number	UN2794
Hazard Class	8	Labels	Corrosive
Packing Group	III		

Reference IATA packing instructions 870

VESSEL – IMO-IMDG:

Proper Shipping Name	Batteries, Wet, Filled with Acid	ID Number	UN2794
Hazard Class	8	Labels	Corrosive
Packing Group	III		

Reference IMDG packing instructions P801

Additional Information

Transport requires proper packaging and paperwork, including the Nature and Quantity of goods, per applicable origin/destination/customs points as-shipped.

SECTION 15: REGULATORY INFORMATION

INVENTORY STATUS:

All components are listed on the TSCA; EINECS/ELINCS; and DSL, unless noted otherwise below.

U.S. FEDERAL REGULATIONS:

TSCA Section 8b – Inventory Status: All chemicals comprising this product are either exempt or listed on the TSCA Inventory.

TSCA Section 12b – Export Notification: If the finished product contains chemicals subject to TSCA Section 12b export notification, they are listed below:

<u>Chemical</u>	<u>CAS #</u>
None	NA

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT)

Chemicals present in the product which could require reporting under the statute:

<u>Chemical</u>	<u>CAS #</u>
Lead	7439-92-1
Sulfuric acid	7664-93-9

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

The finished product contains chemicals subject to the reporting requirements of Section 313 of SARA Title III.

<u>Chemical</u>	<u>CAS #</u>	<u>% wt</u>
Lead	7439-92-1	65
Sulfuric acid	7664-93-9	25

CERCLA SECTION 311/312 HAZARD CATEGORIES: Note that the finished product is exempt from these regulations, but lead and sulfuric acid above the thresholds are reportable on Tier II reports.

Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No
Immediate Hazard	Yes (Sulfuric acid is Corrosive)
Delayed Hazard	No

Note: Sulfuric acid is
Hazardous

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listed as an Extremely
Substance.

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STATE REGULATIONS (US):

California Proposition 65

The following chemicals identified to exist in the finished product as distributed into commerce are known to the State of California to cause cancer, birth defects, or other reproductive harm:

<u>Chemical</u>	<u>CAS #</u>	<u>% Wt</u>
Arsenic (as arsenic oxides)	7440-38-2	<0.1
Strong inorganic acid mists including sulfuric acid	NA	25
Lead	7439-92-1	65

California Consumer Product Volatile Organic Compound Emissions

This Product is not regulated as a Consumer Product for purposes of CARB/OTC VOC Regulations, as-sold for the intended purpose and into the industrial/Commercial supply chain.

INTERNATIONAL REGULATIONS (Non-US):

Canadian Domestic Substance List (DSL)

All ingredients remaining in the finished product as distributed into commerce are included on the Domestic Substances List.

WHMIS Classifications

Class E: Corrosive materials present at greater than 1%

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

NPRI and Ontario Regulation 127/01

This product contains the following chemicals subject to the reporting requirements of Canada NPRI +/- Ont. Reg. 127/01:

<u>Chemical</u>	<u>CAS #</u>	<u>% Wt</u>
Lead	7439-92-1	65
Sulfuric acid	7664-93-9	25

European Inventory of Existing Commercial Chemical Substances (EINECS)

All ingredients remaining in the finished product as distributed into commerce are exempt from, or included on, the European Inventory of Existing Commercial Chemical Substances.

European Communities (EC) Hazard Classification according to directives 67/548/EEC and 1999/45/EC.

<u>R-Phrases</u>	<u>S-Phrases</u>
35, 36, 38	1/2, 26, 30, 45

Additional Information

This product may be subject to Restriction of Hazardous Substances (RoHS) regulations in Europe and China, or may be regulated under additional regulations and laws not identified above, such as for uses other than described or as-designed/as-intended by the manufacturer, or for distribution into specific domestic destinations.

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:

Distribution into Quebec to follow Canadian Controlled Product Regulations (CPR) 24(1) and 24(2).

Distribution into the EU to follow applicable Directives to the Use, Import/Export of the product as-sold.

Sources of Information:

International Agency for Research on Cancer (1987), *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: Overall Evaluations of Carcinogenicity: An updating of IARC Monographs Volumes 1-42, Supplement 7, Lyon, France.*

Ontario Ministry of Labour Regulation 654/86. Regulations Respecting Exposure to Chemical or Biological Agents.

RTECS – Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health.

MSDS/SDS PREPARATION INFORMATION:

DATE OF ISSUE: **30 April 2013**

SUPERCEDES: **16 December 2011**

DISCLAIMER:

This Material Safety Data Sheet is based upon information and sources available at the time of preparation or revision date. The information in the MSDS was obtained from sources which we believe are reliable, but are beyond our direct supervision or control. We make no Warranty of Merchantability, Fitness for any particular purpose or any other Warranty, Expressed or Implied, with respect to such information and we assume no liability resulting from its use. For this and other reasons, we do

MATERIAL SAFETY DATA SHEET
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ACID

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not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. It is the obligation of each user of this product to determine the suitability of this product and comply with the requirements of all applicable laws regarding use and disposal of this product. For additional information concerning East Penn Manufacturing Co., Inc. products or questions concerning the content of this MSDS please contact your East Penn representative.

END



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-Bleach₁

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 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	Odor	Bleach
Appearance	Clear	Odor Threshold	No information available
Color	Pale yellow		

<u>Property</u>	<u>Values</u>	<u>Remarks/ Method</u>
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 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 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 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 7681-52-9	X	X	X	X	
Sodium chlorate 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.

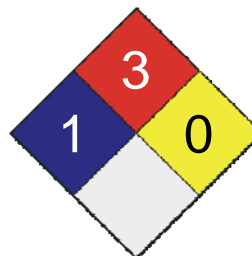
End of Safety Data Sheet

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
 Morris Corporate Center IV
 399 Interpace Parkway
 P.O. Box 225
 Parsippany, NJ 07054-0225
 In Case of Emergency: 1-800-338-6167
 Transportation Emergencies: 24 Hour Number:
 North America: CHEMTREC: 1-800-424-9300
 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. 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 Not established OSHA-PEL Not established
Butane	ACGIH-TLV TWA: 1000 ppm OSHA-PEL Not established
Ethanol	ACGIH-TLV TWA: 1000 ppm STEL: 1000 ppm OSHA-PEL TWA: 1000 ppm
Propane	ACGIH-TLV TWA: 1000 ppm OSHA-PEL 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. 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. 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). 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. When using do not eat or drink. 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. Aerosol containers are unstable at temperatures above 49°C (120.2°F). Do not freeze. 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
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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. 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

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.
Product Registration: Registered with EPA, EPA Reg. No. 777-99

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - Yes
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 - Vanilla & 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

PURELL® Instant Hand Sanitizer

Version 1.0

SDS Number: 400000000469

Revision Date: 01/31/2017

- 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



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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 1,880 mg/m3	CA AB OEL
		STEL	1,000 ppm	CA BC OEL


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		TWAEV	1,000 ppm 1,880 mg/m ³	CA QC OEL
		STEL	1,000 ppm	ACGIH
Isopropyl Alcohol	67-63-0	TWA	200 ppm 492 mg/m ³	CA AB OEL
		STEL	400 ppm 984 mg/m ³	CA AB OEL
		TWA	200 ppm	CA BC OEL
		STEL	400 ppm	CA BC OEL
		TWAEV	400 ppm 983 mg/m ³	CA QC OEL
		STEV	500 ppm 1,230 mg/m ³	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

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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/cm ³
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 mm ² /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.

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Incompatible materials : Strong oxidizing agents
Flammable solids
Self-reactive substances and mixtures
Water-reactive substances

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation
Eye contact
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
Exposure time: 4 h
Test atmosphere: vapour

Isopropyl Alcohol:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 72.6 mg/l
Exposure time: 4 h
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

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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
Result: negativeGenotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)
Test species: Mouse
Application Route: Ingestion
Result: negative**Isopropyl Alcohol:**Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negativeGenotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
cytogenetic assay)
Test species: Mouse
Application Route: Intraperitoneal injection
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

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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.

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****Ethyl Alcohol:**

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

Isopropyl Alcohol:

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

Persistence and degradability**Components:****Ethyl Alcohol:**

- Biodegradability : Result: Readily biodegradable.
Biodegradation: 84 %
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

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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.
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.
(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.
(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.
(Ethanol, Propan-2-ol)
- Class : 3
- Packing group : III
- Labels : 3
- ERG Code : 127
- Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

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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.

SAFETY DATA SHEET

Lucas Extreme Duty Gun Grease



Section 1. Identification

GHS product identifier : Lucas Extreme Duty Gun Grease

Other means of identification : Not available.

Product number : 10889, 10919

Identified uses

Not available.

Supplier's details : Lucas Oil Products, Inc
302 North Sheridan Street
Corona, California 92880-2067
Toll Free: (800) 342-2512
Tel: (951) 270-0154
Fax: (951) 270-1902
Website: www.LucasOil.com

Emergency telephone number (with hours of operation) : (951) 493-1149
(951) 847-5949
Markn@lucasoil.com

7:00A.M. to 5:00P.M. Monday thru Friday

Section 2. Hazards identification

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

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms



Signal word : Warning

Hazard statements : Causes serious eye irritation.
Causes skin irritation.

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Wear protective gloves. Wear eye or face protection. Wash hands thoroughly after handling.





Section 2. Hazards identification

- Response** : IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- Storage** : Not applicable.
- Disposal** : Not applicable.
- Hazards not otherwise classified** : None known.

Section 3. Composition/information on ingredients

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

CAS number/other identifiers

- CAS number** : Not applicable.
- Product code** :

Ingredient name	%	CAS number
Antimony, dialkyl dithiocarbamate	5 - 10	15890-25-2
Butene, homopolymer	1 - 5	9003-29-6
Lithium hydroxide, monohydrate	1 - 5	1310-66-3

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

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

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

Section 4. First aid measures

Description of necessary first aid measures

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





Section 4. First aid measures

- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation.
- Ingestion** : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : No specific fire or explosion hazard.





Section 5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
Sulfur oxides
metal oxide/oxides
- Special protective actions for fire-fighters** : No special measures are required.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

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

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.





Section 7. Handling and storage

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

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Antimony, dialkyl dithiocarbamate	ACGIH TLV (United States, 6/2013). TWA: 0.5 mg/m ³ , (as Sb) 8 hours. OSHA PEL (United States, 2/2013). TWA: 0.5 mg/m ³ , (as Sb) 8 hours. NIOSH REL (United States, 4/2013). TWA: 0.5 mg/m ³ , (as Sb) 10 hours.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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

Individual protection measures

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

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

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

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.





Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid. [Grease.]
Color	: Blue.
Odor	: Grape.
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Closed cup: >200°C (>392°F)
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: >1 [Air = 1]
Relative density	: 0.92
Solubility	: Negligible.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: High temperatures, sparks, or open flames.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Antimony, dialkyl dithiocarbamate	LD50 Dermal LD50 Oral	Rabbit Rat	16000 mg/kg 16400 mg/kg	- -





Section 11. Toxicological information

Irritation/Corrosion

There is no data available.

Sensitization

There is no data available.

Carcinogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

Name	Result
Butene, homopolymer	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation.
- Ingestion** : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Long term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Potential chronic health effects

- General** : No known significant effects or critical hazards.





Section 11. Toxicological information

- Carcinogenicity** : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	16835 mg/kg

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Butene, homopolymer	7.6 to 7.8	314 to 1882	high

Mobility in soil

- Soil/water partition coefficient (K_{oc})** : Not available.

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

Section 13. Disposal considerations

- Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.



**Section 14. Transport information**

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name			-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

AERG : Not applicable.

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 307: Antimony, dialkyl dithiocarbamate

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304**Composition/information on ingredients**

No products were found.

SARA 304 RQ : Not applicable.





Section 15. Regulatory information

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Butene, homopolymer	1 - 5	No.	No.	No.	Yes.	No.
Lithium hydroxide, monohydrate	1 - 5	No.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Antimony, dialkyl dithiocarbamate	15890-25-2	5 - 10
Supplier notification	Antimony, dialkyl dithiocarbamate	15890-25-2	5 - 10

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

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : The following components are listed: Distillates (petroleum), hydrotreated heavy naphthenic; Distillates (petroleum), solvent-refined heavy paraffinic; Antimony, dialkyl dithiocarbamate; Lithium hydroxide, monohydrate

Pennsylvania : The following components are listed: Antimony, dialkyl dithiocarbamate

California Prop. 65

No products were found.

Section 16. Other information

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

Health : 2 * **Flammability** : 1 **Physical hazards** : 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

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

Health : 2 **Flammability** : 1 **Instability** : 0

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue mm/dd/yyyy : 02/15/2015



Section 16. Other information

Version	: 1
Revised Section(s)	: Not applicable.
Prepared by	: KMK Regulatory Services Inc.
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

Notice to reader

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

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



SAFETY DATA SHEET

GASOLINE, UNLEADED



000003000644

Version 3.0

Revision Date 2019/06/14

Print Date 2019/06/14

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
P.O. Box 2844, 150 - 6th Avenue South-West
Calgary Alberta T2P 3E3
Canada

Emergency telephone number
Suncor Energy: +1 403-296-3000;
Canutec Transportation: 1-888-226-8832 (toll-free) or 613-996-6666;
Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the 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

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- 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.

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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

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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

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-
- | | |
|---|--|
| 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, CO ₂), nitrogen oxides (NO _x), 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.
Wear a positive-pressure supplied-air respirator with full face-piece. |
-

SECTION 6. ACCIDENTAL RELEASE MEASURES

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

SECTION 7. HANDLING AND STORAGE

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

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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 188 mg/m ³	CA AB OEL
		TWA	20 ppm	CA BC OEL
		TWAEV	50 ppm 188 mg/m ³	CA QC OEL
benzene	71-43-2	TWA	20 ppm	ACGIH
		TWA	0.5 ppm 1.6 mg/m ³	CA AB OEL
		STEL	2.5 ppm 8 mg/m ³	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 3 mg/m ³	CA QC OEL
		STEV	5 ppm 15.5 mg/m ³	CA QC OEL
		TWA	0.5 ppm	ACGIH
Gasoline; Low boiling point naphtha -unspecified	86290-81-5	STEL	2.5 ppm	ACGIH
		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
ethanol	64-17-5	STEL	500 ppm	ACGIH
		TWA	1,000 ppm 1,880 mg/m ³	CA AB OEL
		STEL	1,000 ppm	CA BC OEL
		TWAEV	1,000 ppm 1,880 mg/m ³	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

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				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.

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Protective measures : Wash contaminated clothing before re-use.

Hygiene measures : Remove and wash contaminated clothing and gloves, including the inside, before re-use.
Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear liquid.

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)
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

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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 CO_x, NO_x, 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

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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 - As-
sessment : May cause cancer.

Reproductive toxicity

Product:

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

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GASOLINE, UNLEADED



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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

SAFETY DATA SHEET

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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

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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
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 : 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



Version 3.0

Revision Date 2020/01/27

Print Date 2020/01/27

SECTION 1. IDENTIFICATION

Product name : PROPANE

Synonyms : Propane HD-5, Propane commercial, Liquefied Petroleum Gas (LPG), C₃H₈, CGSB Propane Grade 1, CGSB Propane Grade 2, odorized propane, stench propane, automotive propane, ER62.

Product code : 100139

Manufacturer or supplier's details

Petro-Canada
P.O. Box 2844, 150 - 6th Avenue South-West
Calgary Alberta T2P 3E3
Canada

Emergency telephone number : CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887;
Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

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

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

SAFETY DATA SHEET

PROPANE

000003000646



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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 %

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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 fire-fighting : If the product release cannot be shut off safely, allow the product to burn itself out.
Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides (CO, CO₂), smoke and irritating vapours as products of incomplete combustion.

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- 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.
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.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
In case of inadequate ventilation wear respiratory protection.
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.
Ensure adequate ventilation.
Use explosion-proof ventilation equipment.
Non-sparking tools should be used.
Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

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

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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 1,800 mg/m ³	CA QC OEL
propene	115-07-1	TWA	500 ppm 860 mg/m ³	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 1,900 mg/m ³	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.

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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. Wear suitable protective equipment.
Hygiene measures	: Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Gas at room temperature; liquid when stored under pressure., compressed liquefied gas
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) 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

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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 CO _x , 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
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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 - As-
sessment

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

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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

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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
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

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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.

NAPA® PREM PERF GEAR OIL SAE
80W-90 GEAR OIL NP75213

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

Ashland	Regulatory Information Number	1-800-325-3751
P.O. Box 2219	Telephone	614-790-3333
Columbus, OH 43216	Emergency telephone	1-800-ASHLAND (1-800-274-5263)
Product name	NAPA® PREM PERF GEAR OIL SAE 80W-90 GEAR OIL	
Product code	NP75213	
Product Use Description	No data	

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, amber

CAUTION! PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION.

Potential Health Effects

Routes of exposure

Inhalation, Skin contact, Eye Contact, Ingestion

Eye contact

Unlikely to cause eye irritation or injury.

Skin contact

Unlikely to cause skin irritation or injury. Prolonged or repeated contact may dry and crack the skin.

Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

Inhalation

It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing small amounts of this

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material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: Skin, lung (for example, asthma-like conditions)

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways)

Target Organs

No data

Carcinogenicity

This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Reproductive hazard

There are no data available for assessing risk to the fetus from maternal exposure to this material.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Concentration
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAF	64742-54-7	>=70-<80%

4. FIRST AID MEASURES

Eyes

If symptoms develop, move individual away from exposure and into fresh air. Flush eyes gently with water while holding eyelids apart. If symptoms persist or there is any visual difficulty, seek medical attention.

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Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Do not induce vomiting. Give one glass of milk or water, and get medical attention immediately. If possible, do not leave victim unattended.

Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Notes to physician

Hazards: Acute aspiration of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Repeated aspiration of small quantities of mineral oil can produce chronic inflammation of the lungs (i.e. lipoid pneumonia) that may progress to pulmonary fibrosis. Symptoms are often subtle and radiological changes appear worse than clinical abnormalities. Occasionally, persistent cough, irritation of the upper respiratory tract, shortness of breath with exertion, fever, and bloody sputum occur. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

Treatment: No information available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical, Carbon dioxide (CO2), Foam, Water spray

Hazardous combustion products

carbon dioxide and carbon monoxide, oxides of sulfur, nitrogen and phosphorus, Hydrocarbons

Precautions for fire-fighting

Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). DO NOT direct a solid stream of water or foam into hot, burning pools of liquid since this may cause frothing and increase

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fire intensity. Frothing can be violent and possibly endanger any firefighter standing too close to the burning liquid.

Flammability Class for Flammable Liquids
Combustible Liquid Class IIIB

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions

Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred.

Methods for cleaning up

Absorb liquid on vermiculite, floor absorbent or other absorbent material.

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage

Store in a cool, dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

NAPA® PREM PERF GEAR OIL SAE
80W-90 GEAR OIL NP75213**Exposure controls**

General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye protection

Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection

Wear resistant gloves (consult your safety equipment supplier).
Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.

Respiratory protection

Respiratory protection is not required under normal conditions of use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Form	No data
Colour	amber
Odour	No data
Boiling point/boiling range	218.30 °C / 424.9 °F@ 760.00 mmHg
pH	No data
Flash point	(>)432 °F / 222 °C, Cleveland open cup
Evaporation rate	> 1 (Ethyl Ether)
Explosion limits	No data
Vapour pressure	0.10 mmHg
Vapour density	(>) 1 (AIR=1)
Density	0.8916 g/cm ³ @ 60.01 °F / 15.56 °C 7.28 lb/gal @ 60.1 °F / 15.6 °C
Solubility	No data
Partition coefficient: n-octanol/water	No data

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log Pow no data available
Autoignition temperature No data

10. STABILITY AND REACTIVITY

Stability

Stable

Conditions to avoid

None known.

Incompatible products

Strong oxidizing agents

Hazardous decomposition products

carbon dioxide and carbon monoxide, oxides of sulfur, nitrogen and phosphorus,
Hydrocarbons

Hazardous reactions

Product will not undergo hazardous polymerization.

Thermal decomposition

No data

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAF	LD 50 Rat: > 15 g/kg
--	----------------------

Acute inhalation toxicity

DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAF	no data available
--	-------------------

Acute dermal toxicity

DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAF	LD 50 Rabbit: > 5 g/kg
--	------------------------

12. ECOLOGICAL INFORMATION

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Aquatic toxicity

Acute and Prolonged Toxicity to Fish

No data

Acute Toxicity to Aquatic Invertebrates

No data

Environmental fate and pathways

No data

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922.

14. TRANSPORT INFORMATION

Dangerous goods descriptions (if indicated above) may not reflect package size, quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

SARA Hazard Classification Acute Health Hazard

SARA 313 Component(s)

Reportable quantity - Components

DISTILLATES (PETROLEUM),	64742-54-7	none
HYDROTREATED HEAVY PARAF		

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	Health	Flammability	Reactivity	Other
HMIS	1	1	0	
NFPA	1	1	0	

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

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
<u>In case of emergency</u>	: 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.
<u>Potential acute health effects</u>	
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.
<u>Potential chronic health effects</u>	
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

<u>Name</u>	<u>CAS number</u>	<u>%</u>
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 (NO_x), sulphur oxides (SO_x), 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) TWA: 5 mg/m ³ , (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 CO_x, NO_x, SO_x, aldehydes, methacrylate monomers, asphyxiants, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
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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.

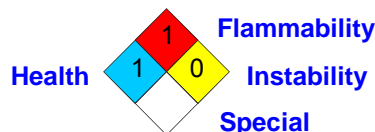
International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.

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.
 ™ Trademark of Suncor Energy Inc. Used under licence.

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.

**24-HOUR EMERGENCY PHONE NUMBERS
MEDICAL AND TRANSPORTATION (SPILL):**
1-800-468-1760

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

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

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SUPERSEDES: June 11, 2007

PREPARED BY: Product MSDS Coordinator

APPROVED BY: MSDS Task Force

**USED OIL
MATERIAL SAFETY DATA SHEET**

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

WT%	NAME	SYNONYM	CAS NO.	OSHA PEL		ACGIH TLV®		LD ^a	LC ^b
				TWA	STEL	TWA	STEL		
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.

^aOral-Rat LD₅₀ (mg/kg)
^bInhalation-Rat LC₅₀

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.

USED OIL MATERIAL SAFETY DATA SHEET

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**.

**USED OIL
MATERIAL SAFETY DATA SHEET**

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.

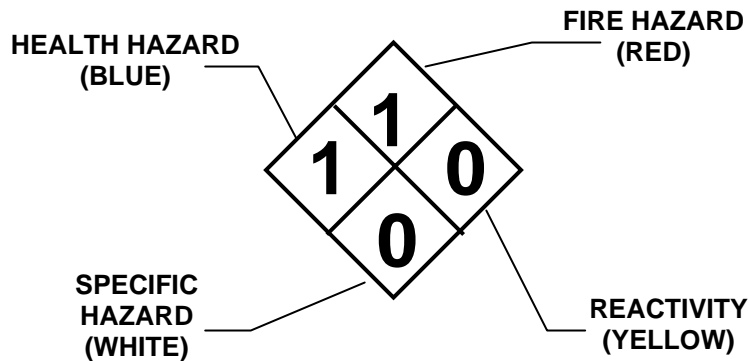
SECTION 5: FIRE FIGHTING MEASURES

- 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.

USED OIL MATERIAL SAFETY DATA SHEET

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**.

USED OIL MATERIAL SAFETY DATA SHEET

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.

USED OIL MATERIAL SAFETY DATA SHEET

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
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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.

**USED OIL
MATERIAL SAFETY DATA SHEET**

SECTION 10: STABILITY AND REACTIVITY

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

USED OIL MATERIAL SAFETY DATA SHEET

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 Not applicable.

GUIDE NUMBER: 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.

USED OIL MATERIAL SAFETY DATA SHEET

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.

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either express or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the product as supplied to the user.



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Appendix B - Immediately Reportable Spill Quantities

Item No.	TDGA Class	Description of Contaminant	Amount Spilled
1	1	Explosives	Any amount
2	2.1	Compressed gas (flammable)	Any amount of gas from containers with a capacity > 100 L
3	2.2	Compressed gas (non-corrosive, non-flammable)	Any amount of gas from containers with a capacity > 100 L
4	2.3	Compressed gas (toxic)	Any amount
5	2.4	Compressed gas (corrosive)	Any amount
6	3.1, 3.2, 3.3	Flammable liquid	> 100 L
7	4.1	Flammable solid	> 25 kg
8	4.2	Spontaneously combustible solids	> 25 kg
9	4.3	Water reactant solids	> 25 kg
10	5.1	Oxidizing substances	> 50 L or 50 kg
11	5.1	Organic Peroxides	> 1 L or 1 kg
12	6.1	Poisonous substances	> 5 L or 5 kg
13	6.2	Infectious substances	Any amount
14	7	Radioactive	Any amount
15	8	Corrosive substances	> 5 L or 5 kg
16	9.1 (in part)	Miscellaneous products or substances, excluding PCB mixtures	> 50 L or 50 kg
17	9.2	Environmentally hazardous	> 1 L or 1 kg
18	9.3	Dangerous wastes	> 5 L or 5 kg
19	9.1 (in part)	PCB mixtures of 5 or more parts per million	> 0.5 L or 0.5 kg
20	None	Other contaminants (e.g. crude oil, drilling fluid, produced water, waste or spent chemicals, used or waste oil, vehicle fluids, waste water, etc.)	> 100 L or 100 kg
21	None	Sour natural gas (i.e. contains H ₂ S) Sweet natural gas	Uncontrolled release or sustained flow of 10 minutes or more
22	None	Unknown substance	Any amount

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

Appendix C - NT-NU Spill Report Form

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.



Canada

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		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____
	B		OCCURRENCE DATE: MONTH – DAY – YEAR			
C	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION	
<input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN						
E	LATITUDE			LONGITUDE		
	DEGREES	MINUTES	SECONDS	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
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY		POSITION	EMPLOYER	LOCATION CALLED	REPORT LINE NUMBER
			STATION OPERATOR		YELLOWKNIFE, NT	(867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC				SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME		CONTACT TIME	REMARKS	
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						