



# SPILL CONTINGENCY AND FUEL MANAGEMENT PLAN

Hornby Basin Property, NU

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# 1 Introduction

This Spill Contingency and Fuel Management Plan (“SCFMP”) has been prepared on behalf of Future Fuels Inc. (“Future Fuels” or the “Company”) in accordance with applicable legislation, guidelines, and best practices relevant to activities at the Hornby Basin Property (the “Property” or the “Project”) in Nunavut, Canada.

The SCFMP is scheduled to take effect in November 2025, pending approval from all relevant regulatory authorities, and will be revised if there are any significant changes to the activities outlined in existing permits.

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

## 1.1 Project Description

The Hornby Basin Property (the “Property” or the “Project”) consists of 232 contiguous mineral claims covering approximately 3,355 km<sup>2</sup> (335,518 hectares) and six contiguous mineral leases covering approximately 62 km<sup>2</sup> (6,195 hectares). It is located on NTS map sheets 086M08, 086N01–N03, 086N05–N07, 086O03–O04, 086K16, and 086J12–J14, and is centered at 523,237mE, 7,441,310mN (NAD83 UTM Zone 11N), approximately 95 km southwest of Kugluktuk. The Property overlaps with both Crown Land and partially overlaps Inuit Owned Lands (“IOL”) parcels CO-52, CO-53, and CO-60. Future Fuels Inc. (“Future Fuels” or the “Company”) holds a 100% interest in the Property.

Exploration activities at the Property to date include ground geophysical surveys. No exploration activities are planned to take place on Inuit-owned lands.

Future Fuels is proposing a 2026 exploration program on the Property, anticipated to run for approximately 185 days beginning in May and ending in October (weather permitting). Similar field programs, including the same types of exploration activities, are expected to take place annually between May and October in subsequent years. Specific dates will be relayed to the CIRNAC engineer and any other necessary regulatory agencies.

The proposed exploration program will include general exploration activities, such as prospecting, geological mapping, geochemical sampling (rock, soil, till), drone photogrammetry, airborne or ground geophysics, downhole geophysics and core drilling for up to 2 diamond drill rigs. Drillhole depth is expected to average <500m with the total annual program expected to be less than approximately 10,000m. Drillhole locations are still to be determined, but locations will be submitted to the Nunavut Water Board (“NWB”) and Crown-Indigenous Relations and Northern Affairs Canada (“CIRNAC”) for approval prior to any ground disturbance. All planned drillhole pads will be inspected for the presence of archaeologically significant artifacts prior to commencement of drilling.

The 2026 program will include the establishment of a seasonal 25-person camp near Mountain Lake or Mouse Lake (see Map below for potential camp locations), including a storage facility and a dedicated fuel cache. Planned camp infrastructure consists of 10-12 canvas sleeper tents (or

similar), two kitchen tents/dry tents (with showers), one office tent, two core logging tents, a generator shack, a storage facility, a fuel cache, and incinerator, and outhouses or a pecto system. Most camp structures will be canvas prospector-style tents, or similar units, typically set up with plywood flooring. The final camp location will be communicated with the relevant regulatory bodies prior to mobilization.

If required, a short-term, smaller-scale fly camp may also be established to support work in the southeastern portion of the Property. Any such temporary camp would include only essential structures and would be demobilized once work in that area is complete.

Three to five camp construction personnel will be on site for approximately 15 days (9 days for set up and 6 days for take down). Staff on site for the duration of the work program will consist of up to 3 to 5 geologists, 2 helicopter-company personnel, 1 to 2 cooks, 1 camp manager, and up to 12 drill company-personnel. Total amount of time spent on site will amount up to approximately 4,625 man-days per calendar year. This man-day estimate assumes full occupancy (25 personnel) for the full 185-day operational window.

All waste, including organic and inorganic materials, will either be incinerated on-site in accordance with regulatory guidelines or transported to Kugluktuk, NU, or Yellowknife, NWT for proper disposal.

The proposed work will be helicopter-supported and require the occasional landing of the aircraft. To mitigate any potential impact on wildlife, the helicopter will always maintain a minimum altitude of 610 m (2,100 ft) above ground level except during landing, take-off or if there is a specific requirement for low level flying (e.g. airborne surveys, drill rig moves, camp assembly). Wildlife will be avoided, and the helicopter will not land in the presence of wildlife except in an emergency.

All empty fuel drums will be brought back to Kugluktuk, NU, or Yellowknife, NWT for disposal.

The Nunavut Planning Commission (“NPC”) previously reviewed works associated with the Property and issued conformity determination (August 15, 2025), confirming that the Project is located outside the area of an applicable regional land use plan. The associated NPC File number is 150888. Activities on the Property have not been previously screened by the Nunavut Impact Review Board (“NIRB”) or other regulatory agencies.

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

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

## **1.2 Purpose and Scope**

The SCFMP provides detailed guidance for the safe storage and management of fuels and other potentially hazardous substances. Its purpose is to reduce the risk of environmental contamination and protect personnel in the event of an accidental release. Should a spill occur, the SCFMP outlines clear and specific response procedures. The objectives of this plan are to:

- Promote the safe handling and use of hazardous substances.
- Support the efficient and secure recovery of spilled materials.
- Minimize environmental impacts from spills on both land and water.
- Define clear roles, responsibilities, and reporting requirements for spill incidents.
- Provide site-specific information regarding facility infrastructure and emergency procedures.
- Ensure emergency information is readily accessible to cleanup crews, site management, and regulatory authorities.
- Comply with all applicable federal and territorial requirements for Spill Prevention and Response Plans, including spill notification obligations.

### **1.3 Future Fuels Environmental Statement**

Future Fuels is committed to developing the Hornby Basin Property in a socially and environmentally responsible manner, in full compliance with all applicable federal, territorial, and local environmental laws and regulations. We aim to actively collaborate with regulatory agencies, Indigenous organizations, environmental groups, and the public to address concerns, enhance transparency, and promote environmental stewardship throughout the life of the project.

To achieve these goals, Future Fuels has established the following environmental objectives for the Hornby Basin Property:

1. Develop the project in a socially and environmentally responsible manner.
2. Ensure full compliance with all relevant federal, territorial, and local environmental legislation, regulations, and guidelines.
3. Identify and mitigate potential environmental impacts while minimizing risks to the health and safety of workers, contractors, and the public.
4. Develop and implement a site-specific Spill Prevention and Response Plan that meets all regulatory requirements, including federal and territorial notification and reporting obligations.
5. Establish clear responsibilities and protocols for spill reporting, emergency response, and site-specific infrastructure details, including the use of the Hornby Basin Property SCFMP.
6. Implement and maintain an emergency response plan to mitigate the effects of unexpected incidents.
7. Promote the safe handling, management, and use of potentially hazardous materials, and encourage efficient, secure containment and recovery of spills to minimize environmental damage to both land and water.
8. Provide easily accessible emergency information to cleanup crews, project management, employees, contractors, and relevant regulatory agencies.
9. Maintain open and transparent communication with employees, contractors, inspectors, government entities, and regulatory bodies regarding project activities and any site changes.
10. Collaborate with federal, territorial, local, and Indigenous organizations, as well as other stakeholders, to address environmental concerns and support sound environmental policy.
11. Conduct regular training for employees and contractors on environmental policies, spill prevention, and emergency response procedures.
12. Require all contractors to adhere to the Property's environmental policies, procedures, and site-specific requirements.

13. Encourage continuous improvement by fostering a proactive environmental culture among personnel and contractors.
14. Provide site-specific details regarding facility infrastructure, emergency procedures, and environmental safeguards.
15. Address and comply with all environmental requirements related to diamond drilling activities.

The Spill Contingency and Fuel Management Plan is fully communicated to all staff and contractors during on-site orientation. These sessions include comprehensive training to ensure personnel understand the required actions in the event of a spill. Workers are informed of the locations and contents of spill kits and receive instruction on the correct use of spill response equipment and procedures. The Company is committed to ensuring that all personnel remain up to date on current technologies and best practices related to spill response.

## **2 Hazardous Materials On-Site**

This section outlines the hazardous materials expected to be most commonly used at the Hornby Basin Property (Table 2-1). This list may change over time as new technologies, spill-response methods, or exploration activities evolve. Any updates will be incorporated into future revisions of this plan. All Material Safety Data Sheets (MSDS) / Safety Data Sheets (SDS) for hazardous materials on site are supplied by the manufacturers and are intended for use during spill response or emergency situations. Copies of the MSDS/SDS documents are provided in Appendix 2 for employees to review and familiarize themselves with the chemicals on site.

The Future Fuels Project Manager is responsible for maintaining a detailed inventory of all fuels and hazardous materials, as well as overseeing the monitoring and upkeep of all associated storage areas.

### **2.1 Fuel**

For the 2026 exploration program, a fuel cache will be established near the camp to store diesel and jet fuel, along with smaller quantities of gasoline, propane, cleaning products, motor oil, and waste oil. All fuel will be stored no closer than the regulated 31 metres from any waterbody.

Diesel, jet fuel, and gasoline will be stored in 205 L steel drums, while propane will be stored in 100 lb cylinders. Fuel drums will be arranged in organized rows and inspected daily throughout the Project. Secondary containment berms will be equipped with Rain Drain hydrocarbon filters to allow clean water drainage, along with Spilfyter RailMat absorbent fabric. Spill kits will be available at every fuel cache. Empty drums will be routinely removed from the site during operations and transported to an appropriate disposal or refill facility in Kugluktuk or Yellowknife. Waste oil will be sealed and removed from the Property for proper disposal.

Berm capacity will be verified to ensure it meets or exceeds 110% of the largest single container volume or 10% of the aggregate volume, whichever is greater. Each drum will be inspected and documented upon arrival and again prior to removal. Refueling activities will use grounded, filtered pumps positioned over rigid drip trays, with appropriate setbacks from ignition sources during fuel transfers. Spill kits and fire extinguishers will be located at all fuel caches and helipads. Spill-

response training will be provided, with refresher sessions conducted at the start of each field rotation.

*Table 2-1 List of Hazardous Materials On-Site*

Quantity	Equipment and Purpose
10,000L	Diesel Fuel for camp and drilling (205L drums collapsible bladders)
25,000L	Jet fuel for helicopter operations (205 L drums or collapsible bladders)
2,500L	Gasoline for generators, pumps, and drilling (205 L drums or collapsible bladders)
3,000 lbs	Propane for cooking & heating (100 lb cylinders)

## **2.2 Other Hazardous Materials**

Other hazardous materials present or required at the Property—such as cleaning chemicals, motor oil, drilling additives, antifreeze, and batteries—will be transported to Kugluktuk or Yellowknife for proper disposal. All hazardous materials will be stored in their original containers within the designated hazardous materials cache or storage area.

### *2.2.1 Chemicals*

Chemicals used on-site may include household-grade cleaning products such as Lysol, ammonia-based cleaners, wash soaps, hand sanitizer, degreasers, and similar supplies. Small quantities of additional items, including insect repellent and aerosols, may also be present. All such materials will be stored in their original containers within designated storage areas and removed from the Property at the end of the program.

Before being transported to the drill site, all hazardous material containers will be inspected for signs of damage, including dents, cracks, or punctures, to ensure safe handling and storage.

### *2.2.2 Motor, Hydrologic and Gear Oils*

Approximately 40 litres of motor, hydraulic, and gear oil will be stored on-site at camp. These oils will be supplied in 1-litre or 20-litre plastic containers and replenished as needed throughout the program. They will be used primarily as crankcase oils for diesel engines powering the electrical generator, as well as gasoline engines in smaller equipment such as portable generators.

All containers will be stored outdoors near the drill, placed on pallets, wrapped in polyethylene sheeting, and covered with a tarp, or alternatively stored on spill-containment pallets to prevent environmental release.

### *2.2.3 Drilling Additives*

Diamond drilling may require the use of additives depending on geological conditions. Whenever possible, all drilling additives will be non-toxic and biodegradable. During drilling operations, muds, additives, oils, and lubricants will be stored in their original containers within a designated storage area. Once a drill hole is completed, these materials will be removed from the site for proper disposal.

All drilling additives will be handled and transferred in accordance with the manufacturer's instructions and the drill contractor's operating procedures.

#### *2.2.4 Antifreeze*

Drilling will primarily rely on hot water; however, CaCl<sub>2</sub> may be used as an antifreeze when required. To ensure drill fluids do not enter nearby water bodies, all drill waste will be contained within a properly constructed sump or a suitable natural depression located at least 31 metres from the ordinary high-water mark.

Hazardous materials—including CaCl<sub>2</sub>—will be stored within secondary containment, and all storage, handling, and transport will follow the recommendations outlined in the applicable SDS/MSDS documentation.

#### *2.2.5 Lead Acid Batteries*

Lead-acid batteries will be used on drill rigs and diesel engines powering electrical generators, with a small number also supporting portable equipment. Two spare lead-acid batteries will be stored at camp. Given the limited quantity, secondary containment is not required; however, batteries will never be disposed of in regular garbage. All used or damaged batteries will be removed from the Property for proper disposal or recycling.

### **2.3 Potential Environmental Impacts of Hazardous Materials**

- Gasoline can be hazardous to wildlife and aquatic life, as it is not readily biodegradable, and has the potential to bioaccumulate in the environment. It also evaporates quickly.
- Diesel can be harmful to wildlife and aquatic life, as it is not easily biodegradable and may accumulate in the environment. However, since diesel burns slowly, the environmental risk during recovery is lower, as it can be more easily contained than more volatile fuels.
- Jet fuel can be harmful to wildlife and aquatic life. It is not easily biodegradable and has the potential to bioaccumulate in the environment. Additionally, jet fuel evaporates relatively quickly.
- Propane can be harmful to wildlife and the surrounding environment and has the potential to accumulate in the environment. It is highly volatile and is the most flammable substance stored on-site, making impacts to the immediate surroundings a significant concern.
- Oils and greases can be harmful to wildlife and aquatic life. They are not easily biodegradable and may bioaccumulate in the environment.
- Drilling additives can be harmful to wildlife and aquatic life.

### **3 Preventative Measures**

All fuels, hazardous materials, and transfer areas will be stored within Arctic Insta-Berms or comparable secondary containment systems designed for extreme arctic conditions. RainDrain or equivalent filtration systems will be used to manage water drainage and prevent overflow. All storage areas will be located at least 31 metres from any waterbody, with spill kits and firefighting equipment positioned nearby.

Hazardous materials will be clearly labeled in accordance with WHMIS and applicable regulations, including information on material type, handling instructions, SDS/MSDS references, company

name, and delivery date. Signage displaying these details—along with SDS/MSDS sheets—will be posted at all storage and transfer locations, accompanied by “No Smoking” signage.

Fuel drums and tanks will be inspected prior to transport or refilling, and routine monitoring will be conducted on storage containers, fuel transfer equipment, and fuel caches throughout drilling operations. Any damage, leaks, or spills identified during inspections will be documented, reported, and addressed immediately.

The Project Manager will be responsible for overseeing all inspections, maintaining records, and tracking the inventory of fuel and hazardous materials on site.

### **3.1 Hazardous Materials**

#### *3.1.1 Fuel*

Fuel drums will be stored on their sides in organized rows with bungs positioned at the three and nine o'clock orientations to prevent tipping or rolling. Drums will be placed upright 1–2 days prior to use to allow any sediment or contaminants to settle. Routine inspections will check for leaks; any leaking fuel will be used immediately or transferred to a secure, intact container. All motorized equipment will undergo regular maintenance to reduce the risk of fluid leaks.

Diesel, jet fuel, and gasoline will be transferred using electric or hand wobble pumps equipped with filtration systems. Drip trays or mini-berms will be placed beneath transfer points to contain potential spills, and proper grounding procedures will be followed when electric pumps are used. Smoking, sparks, open flames, and other ignition sources are strictly prohibited within 100 metres of fuel storage areas and during any fuel-handling or transfer activities.

Personnel responsible for handling or storing fuel will receive training in equipment operation, inspection, and maintenance. All on-site staff will receive training as specified in this document.

#### *3.1.2 Propane*

Propane will be stored in certified containers secured in an upright position and inspected regularly for signs of damage, wear, or corrosion. All cylinders will be equipped with pressure-relief valves to prevent over-pressurization and will display clearly marked manufacturing and re-test dates. Because propane is non-toxic and does not contaminate soil, secondary containment is not required. All cylinders will be safely secured and kept well away from ignition sources at all times.

#### *3.1.3 Chemicals*

Chemicals will be stored in the designated hazardous materials cache with appropriate secondary containment. Materials may be placed on pallets and wrapped or tarped for additional protection. Prior to use, containers or bags will be transported to the drill site, and spill kits—including containers for collecting contaminated soil—will be readily available for cleanup.

Chemicals will be transferred directly from their original containers to the required machinery, typically in quantities of less than 20 litres. Solid products will be poured directly into designated tanks. Used chemicals will be placed into empty containers for shipment off-site, while used motor oil will be collected in sealed, labeled 20-litre pails for proper disposal.

#### 3.1.4 *Battery Acid*

All batteries will be securely mounted in their designated locations when installed in power equipment and stored safely in appropriate secondary containment when not in use.

### **3.2 Transportation of Fuel and Other Hazardous Materials to Site**

The drill company will maintain its own spill-response procedures, which the Project Manager will review to ensure alignment with Project requirements. Fuel and other hazardous materials will be transported to site by helicopter or fixed-wing aircraft, and then slung from the camp by helicopter as needed.

Prior to transport, all fuel drums, tanks, and containers will be inspected for defects such as damaged or missing gaskets, punctures, or other signs of wear. A second inspection will occur upon arrival at the camp and the fuel cache. Throughout transportation, all requirements of the Transportation of Dangerous Goods Act and other applicable legislation will be fully followed.

Empty drums will be removed from the site for appropriate disposal or refill in Kugluktuk or Yellowknife.

### **3.3 Transfer of Fuel and Other Hazardous Materials**

Manual and automatic pumps, along with aviation-grade fuel filters for jet fuel, will be used for transferring all petroleum products. Smoking, sparks, open flames, and any ignition sources are strictly prohibited within 100 metres of hazardous material storage areas, as well as during fuel transfer and refueling operations. Portable drip trays and appropriately sized fuel-transfer hoses with pumps will be used when refueling aircraft or other equipment to prevent leaks or drips onto the ground.

Personnel responsible for handling or storing fuel will receive appropriate training, including instruction on the operation and maintenance of fuel transfer and storage equipment. All on-site staff will receive training as specified in this document.

Chemicals will typically be transferred directly from their original containers into the machinery for which they are intended, generally in quantities of less than 20 litres at a time. Spill kits will be readily available to address any spills during the transfer process.

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

### **3.4 Signs, Labels, and Inspections**

All hazardous materials will be clearly labeled in accordance with WHMIS and applicable legislation. Labels will include key information such as material type, safe handling procedures, MSDS/SDS references supplied by manufacturers, the company name, and the date the material was delivered to site. Signs displaying this information—along with supplier-provided MSDS/SDS sheets—will be prominently posted at all storage and transfer locations, accompanied by “No Smoking” signage wherever hazardous materials are stored or handled.

Storage containers, transfer equipment, and secondary containment systems will be continuously monitored and regularly inspected throughout the program. Inspections will occur each time a hazardous material is handled to identify any damaged or leaking containers. Findings will be documented in the fuel and hazardous materials inspection log. Any damage with the potential to cause a leak will also be recorded. If a leak is identified, the material will be used immediately (if safe to do so) or transferred to an undamaged, secure container.

The Project Manager will oversee the monitoring and inspection program and maintain a detailed inventory of all fuel and hazardous materials on site. Future Fuels will develop a standardized inspection log form to document fuel storage area inspections, hazardous materials inventories, containment system condition, and spill kit status on a routine basis, and will append this form to the revised SCFMP. Personnel responsible for equipment inventory and spill kit replenishment will be formally identified in the revised plan.

### 3.5 Resource Inventory

Spill kits and firefighting equipment will be strategically placed in all areas where hazardous materials are stored, used, or transferred—including at camp and any additional required locations. Appropriate fire extinguishers and related firefighting equipment will be positioned close to all hazardous material storage and handling areas to ensure rapid response capability.

Additional on-site resources will include pumps, impervious sheeting (tarps), plastic bags, buckets, and empty drums for the collection and containment of contaminated materials.

A standard spill kit, with a typical sorbent capacity of 240 litres, will include:

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

## 4 Resource Organization

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

### **“Minor Spill**

*A minor spill is one having little or no actual or anticipated risk to, or adverse impact on persons, property, or the environment. Minor spills are of short duration and are quickly contained and cleaned up by the RP. They involve contaminants of relatively low toxicity, and the extent (area) of the spill is limited.*

*An immediate on-scene investigation of a minor spill is usually unnecessary. The usual course of action upon receipt of a spill report is immediate communication by telephone with the RP and follow-up investigation by a duly authorized enforcement officer within the routine inspection schedule.*

### **Major Spill**

*A major spill is one having, or is anticipated to have, substantial adverse impact or hazard to persons, property, or the environment. These spills may range from a small quantity of a very toxic or hazardous material to a large quantity of a less toxic substance. Containment is often difficult, and there may be a potential for further spillage. This category of spill incident also includes those which have a severe local impact, or which have the potential for serious public concerns.*

*A major spill usually requires an immediate on-scene presence. The officer of the Lead Agency shall monitor major spills closely, exercise good judgment when investigating the incident, and be sensitive to the public’s perception of the spill. These spills often involve considerable enforcement action, and extensive consultation among government departments and Parties to this Agreement.”*

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



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

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

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

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

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

[Contingency planning and spill reporting in Nunavut / Electronic Spill Report Guide](#)

[Spill Report Form](#)

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

On-Site Coordinator: TBD

Project Manager: TBD

Aside from the On-Site Coordinator and the Project Manager, approximately 8-15 personnel are present on-site to aid in spill response and cleanup operations. The number of personnel on-site fluctuates depending on the exploration activities being carried out during the program.

#### 4.1 Spill Response

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

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

10. **Photograph** if and where possible, during and after cleanup.

#### 4.2 Responsibilities of the On-site Coordinator

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

NT-NU 24-Hour Spill Report Line	Tel: (867) 920-8130 Fax: (867) 873-692
Crown Indigenous Relations and Northern Affairs Canada (CIRNAC) Land Use Resource Management Officer	(867) 645-2840
Other regulatory agencies and Future Fuels management	(refer to Table 4-1 – <i>Emergency Contacts</i> )

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

#### 4.3 Responsibilities of the Project Manager

1. Provide regulatory agencies and Future Fuels management with information regarding the status of the cleanup activities.
2. Act as a spokesperson on behalf of Future Fuels management with regulatory agencies as well as the public and media.
3. Prepare and submit a report on the spill incident to regulatory agencies (including the CIRNAC Inspector) within 30 days of the event.
4. Conduct an inventory of the response and clean-up equipment as well as replenish spill kit materials after a spill has occurred.
5. Maintain an inventory of and the location of response and clean-up equipment available to implement the spill contingency plan.

Table 4-1 Emergency Contacts

CONTACT	TELEPHONE NUMBER
Future Fuels Inc.	(604) 681-1568
On-Site Project Geologist	<i>Information to be supplied once phone system is established on the property</i>
CIRNAC - Land Use Manager, Field Operation	(867) 975-4553
Environment Canada 24-hour Duty Officer	(867) 766-3737, (867) 873-8185 (Fax)
CIRNAC– Water Resource Officers, Rankin Inlet and Iqaluit, NU	Rankin Inlet (867) 645-2831 Iqaluit (867) 975-4298
Kitikmeot Inuit Association	(867) 983-2458
Kugluktuk Fire Department	(867) 982-2222
RCMP, Kugluktuk	(867) 982-0123
Nearest Health Centre – Kugluktuk Health Centre	(867) 982-4531

<b>CONTACT</b>	<b>TELEPHONE NUMBER</b>
Nearest Hospital – Yellowknife Hospital	(867)-767-9300
Fisheries and Oceans	(867) 979-8007
Nunavut Department of Environment	(867) 975-7700
Nunavut Department of Environment, Waste Manifests	(867) 975-7748
Manager, Pollution Control and Air Quality, Environmental Protection, Govt of Nunavut	(867) 975-7748; (867) 975-7739 (Fax)

## 5 Containment Procedures / Action Plans

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

To initiate spill containment effectively:

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

### NOTE:

- All Material Safety Data Sheets (“MSDS”)/Safety Data Sheets (“SDS”) for hazardous materials on site are provided by the suppliers of the chemicals which are to be used primarily in the event of a spill or emergency. A copy of MSDS/SDS can be found in Appendix 2 in order for employees to familiarize themselves with the chemicals on site.
- Precautions must be taken to ensure the safety of personnel, and spilled products should be confined to control burning. This can be achieved by containing the spilled material using dikes, trenches, depressions, or ice slots. Before any attempts at in-situ burning, consultation with experts and approval from government authorities are necessary.
- Chemical response methods are available and may involve the use of dispersants, emulsion-treating agents, visco-elastic agents, herding agents, solidifiers, and shoreline cleaning agents.
- Biological response methods include nutrient enrichment and natural microbe seeding.
- Site remediation will be conducted in accordance with the guidance and advice provided by government authorities.

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

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

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

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

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

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

### **5.2 Spills on Snow**

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

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

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

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

### **5.3 Spills on Ice**

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

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

1. Determine the area where the fuel or petroleum product is located.

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

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

#### **5.4 Spills on Water**

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

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

#### **5.5 Spills due to Accidental Load Release**

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

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

## **6 Training**

Adequate training in spill response and the use of spill kits is cost-effective and minimizes environmental harm. Proper use of spill kit materials and swift response can prevent minor incidents from escalating into major disasters. All staff, contractors, and visitors must undergo orientation and

training in initial spill response procedures and understand spill reporting obligations. Additionally, those handling fuel will receive extra training in safe fuel transfer, spill prevention, and response.

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

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

**APPENDIX 1**  
**NWT-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](mailto: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.

<b>A. Report Date/Time</b>	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. <b>Please do not fill in the Report Number:</b> the spill line will assign a number after the spill is reported.
<b>B. Occurrence Date/Time</b>	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).
<b>C. Land Use Permit Number /Water Licence Number</b>	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.
<b>D. Geographic Place Name</b>	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. <b>You must include the geographic coordinates</b> (Refer to Section E).
<b>E. Geographic Coordinates</b>	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.
<b>F. Responsible Party Or Vessel Name</b>	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. <b>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.</b>
<b>G. Contractor involved?</b>	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.
<b>H. Product Spilled</b>	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)
<b>I. Spill Source</b>	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 <sup>2</sup> )
<b>J. Factors Affecting Spill</b>	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.
<b>K. Additional Information</b>	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. <b>Please number the pages to ensure that recipients can be certain that they received all pertinent documents.</b> If only the spill report form was filled out, number the form as "Page 1 of 1".
<b>L. Reported to Spill Line by</b>	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.
<b>M. Alternate Contact</b>	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
<b>N. Report Line Use Only</b>	<b>Leave Blank.</b> This box is for the <b>Spill Line's use only.</b>



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	<b>REPORT NUMBER</b>  _____																													
	B		OCCURRENCE DATE: MONTH – DAY – YEAR				OCCURRENCE TIME																												
C			LAND USE PERMIT NUMBER (IF APPLICABLE)				WATER LICENCE NUMBER (IF APPLICABLE)																												
D						GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION		REGION		<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			ALTERNATE TELEPHONE																				
REPORT LINE USE ONLY												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																																			

## **APPENDIX 2**

### **Material Safety Data Sheets/ Safety Data Sheets**



# AMC CALCIUM CHLORIDE

AMC

Chemwatch Hazard Alert Code: 2

Chemwatch: 20922

Version No: 6.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Issue Date: 02/04/2016

Print Date: 12/08/2017

L.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

Product name	AMC CALCIUM CHLORIDE
Chemical Name	calcium chloride
Chemical formula	Ca-Cl <sub>2</sub>
Other means of identification	Not Available
CAS number	10043-52-4

### Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Used as a drying, dehydrating, desiccating agent for organic liquids, gases. Obsolescent use as refrigerant brine.
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### Details of the supplier of the safety data sheet

Registered company name	AMC
Address	216 Balcatta Rd Balcatta WA 6021 Australia
Telephone	+61 8 9445 4000
Fax	+61 8 9445 4040
Website	www.amcmud.com
Email	amc@imdexlimited.com

### Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	1800 039 008 or +61 3 9573 3112,+800 2436 2255 +613 9573 3112
Other emergency telephone numbers	Not Available

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.**

#### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	0	
Toxicity	2	
Body Contact	2	
Reactivity	0	
Chronic	0	


0 = Minimum  
1 = Low  
2 = Moderate  
3 = High  
4 = Extreme

Poisons Schedule	Not Applicable
Classification <sup>[1]</sup>	Acute Toxicity (Oral) Category 4, Eye Irritation Category 2A

**AMC CALCIUM CHLORIDE**

**Legend:** 1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

**Label elements**

<b>Hazard pictogram(s)</b>	
<b>SIGNAL WORD</b>	<b>WARNING</b>

**Hazard statement(s)**

<b>H302</b>	Harmful if swallowed.
<b>H319</b>	Causes serious eye irritation.
<b>AUH066</b>	Repeated exposure may cause skin dryness and cracking.

**Precautionary statement(s) Prevention**

<b>P270</b>	Do not eat, drink or smoke when using this product.
<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.

**Precautionary statement(s) Response**

<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P337+P313</b>	If eye irritation persists: Get medical advice/attention.

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

<b>P501</b>	Dispose of contents/container in accordance with local regulations.
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**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

**Substances**

CAS No	%[weight]	Name
10043-52-4	>85	<u>calcium chloride</u>
		commercial materials may contain up to
		3% sodium chloride

**Mixtures**

See section above for composition of Substances

**SECTION 4 FIRST AID MEASURES**

**Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.</b></li> <li>▶ For advice, contact a Poisons Information Centre or a doctor.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> </ul>

## AMC CALCIUM CHLORIDE

- ▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
- ▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.
- ▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.

**Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:**

- ▶ **INDUCE** vomiting with fingers down the back of the throat, **ONLY IF CONSCIOUS**. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

**NOTE:** Wear a protective glove when inducing vomiting by mechanical means.

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

As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure), then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination).

For poisons (where specific treatment regime is absent):

#### BASIC TREATMENT

- ▶ Establish a patent airway with suction where necessary.
- ▶ Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- ▶ Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- ▶ Monitor and treat, where necessary, for pulmonary oedema.
- ▶ Monitor and treat, where necessary, for shock.
- ▶ Anticipate seizures.
- ▶ **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

#### ADVANCED TREATMENT

- ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- ▶ Positive-pressure ventilation using a bag-valve mask might be of use.
- ▶ Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- ▶ Drug therapy should be considered for pulmonary oedema.
- ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

Treat symptomatically.

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known.
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### Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn.</li> </ul> <p>Decomposition may produce toxic fumes of:</p> <p>, hydrogen chloride</p> <p>, metal oxides</p> <p>May emit poisonous fumes.</p> <p>May emit corrosive fumes.</p>
<b>HAZCHEM</b>	Not Applicable

AMC CALCIUM CHLORIDE

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

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

See section 8

**Environmental precautions**

See section 12

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

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>Remove all ignition sources.</li> <li>Clean up all spills immediately.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <ul style="list-style-type: none"> <li><b>CAUTION:</b> Advise personnel in area.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7 HANDLING AND STORAGE**

**Precautions for safe handling**

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>Avoid all personal contact, including inhalation.</li> <li>Wear protective clothing when risk of exposure occurs.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>Material is hygroscopic, i.e. absorbs moisture from the air. Keep containers well sealed in storage.</li> <li>Store in original containers.</li> <li>Keep containers securely sealed.</li> </ul>

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

<b>Suitable container</b>	<ul style="list-style-type: none"> <li><b>DO NOT use aluminium or galvanised containers</b></li> <li>Polyethylene or polypropylene container.</li> <li>Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	<p>Inorganic alkaline earth metal derivative. Derivative of very electropositive metal. Calcium chloride (and its hydrates):</p> <ul style="list-style-type: none"> <li>are incompatible with boric acid, calcium oxide, bromine trifluoride, 2-furan, percarboxylic acid</li> <li>may produce explosive hydrogen gas on contact with zinc</li> <li>catalyse exothermic polymerisation of methyl vinyl ether</li> <li>produce heat on contact with water</li> <li>attack metals</li> </ul> <p>Addition of a quantity of calcium chloride to boiling water has generated heat sufficient to cause a violent steam explosion on several occasions</p> <ul style="list-style-type: none"> <li>Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.</li> <li>These trifluorides are hypergolic oxidisers.</li> <li>In presence of moisture, the material is corrosive to aluminium, zinc and tin producing highly flammable hydrogen gas.</li> </ul>

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Control parameters**

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
calcium chloride	Calcium chloride	12 mg/m3	130 mg/m3	790 mg/m3

Ingredient	Original IDLH	Revised IDLH
calcium chloride	Not Available	Not Available


**MATERIAL DATA**

It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience).

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations.

### Exposure controls

<b>Appropriate engineering controls</b>	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>▶ polychloroprene.</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C.</li> </ul>
<b>Thermal hazards</b>	Not Available

### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

- ▶ Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- ▶ The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- ▶ Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- ▶ Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- ▶ Use approved positive flow mask if significant quantities of dust becomes airborne.
- ▶ Try to avoid creating dust conditions.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Material is hygroscopic, absorbs moisture from surrounding air.  Small white crystals, granules, or flakes. No odour.		
<b>Physical state</b>	Divided Solid	<b>Relative density (Water = 1)</b>	2.15
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Applicable
<b>pH (as supplied)</b>	Not Applicable	<b>Decomposition temperature</b>	Not available.
<b>Melting point / freezing point (°C)</b>	772	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	>1600	<b>Molecular weight (g/mol)</b>	110.99
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Applicable	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available

AMC CALCIUM CHLORIDE

<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Applicable
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Nil
<b>Vapour pressure (kPa)</b>	Negligible	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Miscible	<b>pH as a solution (1%)</b>	Not available.
<b>Vapour density (Air = 1)</b>	Not Applicable	<b>VOC g/L</b>	Not Applicable

SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

<b>Inhaled</b>	<p>The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.</p> <p>Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</p> <p>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</p>
<b>Ingestion</b>	<p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>Compared with other metals, the calcium ion and most calcium compounds have low toxicity. Acute calcium poisoning is rare, and difficult to achieve unless calcium compounds are administered intravenously or taken in high doses over a prolonged period.</p> <p> Use as a food additive indicates tolerance of small amounts, but irritant properties and toxic effects of large amounts are well documented. Estimated lethal dose for adult is 30 grams.</p>
<b>Skin Contact</b>	<p>Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Solution of material in moisture on the skin, or perspiration, may increase irritant effects</p> <p>Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p> If skin is wet or moist with perspiration, superficial burns may result. Contact with abraded skin or cuts may rapidly cause severe skin burns.</p>
<b>Eye</b>	<p>Evidence exists, or practical experience predicts, that the material may cause severe eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Eye contact may cause significant inflammation with pain.</p>
<b>Chronic</b>	<p>Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.</p> <p>High blood concentrations of calcium ion may give rise to vasodilation and depress cardiac function leading to hypotension and syncope. Calcium ions enhance the effects of digitalis on the heart and may precipitate digitalis intoxication.</p> <p>Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness.</p>

AMC CALCIUM CHLORIDE

calcium chloride	TOXICITY	IRRITATION
	Oral (rat) LD50: 1000 mg/kg <sup>[2]</sup>	Eye (unknown): severe* [ICI] Skin (unknown): moderate*
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

CALCIUM CHLORIDE	<p>for calcium: Toxicity from calcium is not common because the gastrointestinal tract normally limits the amount of calcium absorbed. Therefore, short-term intake of large amounts of calcium does not generally produce any ill effects aside from <b>constipation</b> and an increased risk of kidney stones .</p> <p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis.</p>
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Acute Toxicity	✓	Carcinogenicity	⊘
Skin Irritation/Corrosion	⊘	Reproductivity	⊘
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	⊘
Respiratory or Skin sensitisation	⊘	STOT - Repeated Exposure	⊘
Mutagenicity	⊘	Aspiration Hazard	⊘

**Legend:** ✗ – Data available but does not fill the criteria for classification  
 ✓ – Data available to make classification  
 ⊘ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
calcium chloride	LC50	96	Fish	=3mg/L	1
	EC50	48	Crustacea	=52mg/L	1
	EC50	96	Algae or other aquatic plants	3130mg/L	4
	BCFD	48	Crustacea	0.0832425mg/L	4
	NOEC	48	Crustacea	260.12mg/L	4
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

for calcium chloride:

**Environmental fate:**

Calcium chlorides vapour pressure is negligible and its water solubility is 745 g/L at 20 deg C. Calcium chloride is readily dissociated into calcium and chloride ions in water. These physico-chemical properties indicate that calcium chloride released into the environment is distributed into the water compartment in the form of calcium and chloride ions.

Calcium provides an important link between tectonics, climate and the carbon cycle. In the simplest terms, uplift of mountains exposes Ca-bearing rocks to chemical weathering and releases Ca<sup>2+</sup> into surface water.

Although inorganic chloride ions are not normally considered toxic they can exist in effluents at acutely toxic levels (chloride >3000 mg/l). The resulting salinity can exceed the tolerances of most freshwater organisms.

**DO NOT discharge into sewer or waterways.**

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

AMC CALCIUM CHLORIDE

**Mobility in soil**

Ingredient	Mobility
	No Data available for all ingredients

**SECTION 13 DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>▶ Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Management Authority for disposal.</li> </ul>
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**SECTION 14 TRANSPORT INFORMATION**

**Labels Required**

<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	Not Applicable

**Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**SECTION 15 REGULATORY INFORMATION**

**Safety, health and environmental regulations / legislation specific for the substance or mixture**

**CALCIUM CHLORIDE(10043-52-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Hazardous Substances Information System - Consolidated Lists	Australia Inventory of Chemical Substances (AICS)
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National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (calcium chloride)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
<b>Legend:</b>	<p>Y = All ingredients are on the inventory</p> <p>N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)</p>

**SECTION 16 OTHER INFORMATION**

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

### Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average  
PC—STEL: Permissible Concentration-Short Term Exposure Limit  
IARC: International Agency for Research on Cancer  
ACGIH: American Conference of Governmental Industrial Hygienists  
STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit.  
IDLH: Immediately Dangerous to Life or Health Concentrations  
OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

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NFPA	HMIS (U.S.A.)	Rating	Protective Clothing	DOT (pictograms)
	Health Hazard (2*)	0 Insignificant		
	Fire Hazard (1)	1 Slight		
	Reactivity (0)	2 Moderate		
	Personal Protection (H)	3 High		
		4 Extreme		

Section I. Chemical Product and Company Identification	
Product Name	<b>ANTIFREEZE</b>
Synonym	Universal Antifreeze, Radiator Antifreeze, Diesel Antifreeze, Petro-Canada Antifreeze-Coolant, Petro-Canada Heavy Duty Antifreeze-Coolant, Pre-Mix Antifreeze, Petro-Canada Premium Radiator Antifreeze.
Manufacturer	PETRO-CANADA P.O. Box 2844 Calgary, Alberta T2P 3E3
Material Uses	Used as an engine antifreeze coolant.
Code	W269
DSL	On the DSL.
TSCA	On TSCA list.
In case of Emergency	Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

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

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

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

Section V. Fire-fighting Measures	
Flammability	May be combustible at high temperature.
Flash Points	Closed Cup: 116°C (Tagliabue) Open Cup: 116°C (Cleveland)
Fire Hazards in Presence of Various Substances	Combustible in presence of open flames and sparks.
Products of Combustion	Carbon oxides (CO, CO <sub>2</sub> ), smoke and irritating vapours as products of incomplete combustion.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO <sub>2</sub> , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Flammable Limits	Lower: 3.2%, Upper: 15.3%
Auto-Ignition Temperature	413°C
Explosion Hazards in Presence of Various Substances	Not a product presenting risks of explosion.

**Section VI. Accidental Release Measures**

<b>Material Release or Spill</b>	Small spill or leak: Dilute with water and mop up or absorb with an inert DRY material and place in an appropriate waste disposal container. Large spill or leak: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Dispose of in accordance with regional regulations.
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**Section VII. Handling and Storage**

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

**Section VIII. Exposure Controls/Personal Protection**

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

**Section IX. Physical and Chemical Properties**

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

**Section X. Stability and Reactivity**

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

**Section XI. Toxicological Information**

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

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

**Section XII. Ecological Information**

<b>Environmental Fate</b>	Not available	<b>Persistence/ Bioaccumulation Potential</b>	Not available
<b>BOD5 and COD</b>	Not available	<b>Products of Biodegradation</b>	Not available
<b>Additional Remarks</b>	No additional remark.		


**Section XIII. Disposal Considerations**

<b>Waste Disposal</b>	Preferred waste management priorities are: (1) recycle or reprocess; (2) incineration with energy recovery; (3) disposal at licensed waste disposal facility. Ensure that disposal or reprocessing is in compliance with government requirements and local disposal regulations. Consult your local or regional authorities.
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**Section XIV. Transport Information**

<b>DOT Classification</b>	Not a DOT controlled material (United States).	<b>Special Provisions for Transport</b>	Not applicable.
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**Section XV. Regulatory Information**

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

**Section XVI. Other Information**

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

FDA - Food and Drug Administration  
FIFRA - Federal Insecticide, Fungicide and Rodenticide Act  
HCS - Hazardous Communication System  
HMIS - Hazardous Material Information System  
IARC - International Agency for Research on Cancer

USP - United States Pharmacopoeia  
WHMIS - Workplace Hazardous Material Information System

**For Copy of MSDS**

Western Canada, telephone: 403-296-4158; fax: 403-296-6551  
Ontario & Central Canada, telephone: 1-800-668-0220; fax: 1-800-837-1228  
Quebec & Eastern Canada, telephone: 514-640-8308; fax: 514-640-8385

For Product Safety Information: (905) 804-4752

Prepared by Product Safety - TAR on 7/3/2001.

Data entry by Product Safety - JDW.

*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.*

**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

<b>INGREDIENTS (Chemical/Common Names):</b>	<b>CAS No.:</b>	<b>% by Wt:</b>	<b>EC No.:</b>
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.

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## LEAD ACID BATTERY WET, FILLED WITH ACID

(US, CN, EU Version for International Trade)

### 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 <sup>3</sup>
		Sulfuric acid	1.00 mg/m <sup>3</sup>

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

TWA: 8-Hour Time-Weighted Average; STE: Short-Term Exposure; mg/m<sup>3</sup>: 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/m<sup>3</sup> as total dust or 5 mg/m<sup>3</sup> as respirable dust.
- May be required to meet Domestic Requirements for a Specific Destination(s).

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE:</b>	Industrial/commercial lead acid battery
<b>ODOUR:</b>	Odourless
<b>ODOUR THRESHOLD:</b>	NA
<b>PHYSICAL STATE:</b>	Sulfuric Acid: Liquid; Lead: solid
<b>pH:</b>	<1
<b>BOILING POINT:</b>	235-240° F (113-116° C) (as sulfuric acid)
<b>MELTING POINT:</b>	NA
<b>FREEZING POINT:</b>	NA
<b>VAPOUR PRESSURE:</b>	10 mmHg
<b>VAPOUR DENSITY (AIR = 1):</b>	> 1
<b>SPECIFIC GRAVITY (H<sub>2</sub>O = 1):</b>	1.27-1.33
<b>EVAPORATION RATE (n-BuAc=1):</b>	< 1
<b>SOLUBILITY IN WATER:</b>	100% (as sulfuric acid)
<b>FLASH POINT:</b>	Below room temperature (as hydrogen gas)
<b>AUTO-IGNITION TEMPERATURE:</b>	NA
<b>LOWER EXPLOSIVE LIMIT (LEL):</b>	4% (as hydrogen gas)
<b>UPPER EXPLOSIVE LIMIT (UEL):</b>	74% (as hydrogen gas)
<b>PARTITION COEFFICIENT:</b>	NA
<b>VISCOSITY (poise @ 25° C):</b>	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/m<sup>3</sup>

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 19<sup>th</sup> 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 – <b>Recycle</b> 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**  
***LEAD ACID BATTERY WET, FILLED WITH***  
***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-Bleach<sub>1</sub>

### 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

<b>Signal word</b>	<b>Danger</b>
<b>Hazard Statements</b>	
Causes severe skin burns and eye damage	
Causes serious eye damage	
	
<b>Appearance</b>	Clear, pale yellow
<b>Physical State</b>	Thin liquid
<b>Odor</b>	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.

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## 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

<b>Physical State</b>	Thin liquid	<b>Odor</b>	Bleach
<b>Appearance</b>	Clear	<b>Odor Threshold</b>	No information available
<b>Color</b>	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

<b>Softening Point</b>	No data available
<b>VOC Content (%)</b>	No data available
<b>Particle Size</b>	No data available
<b>Particle Size Distribution</b>	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

<b>Inhalation</b>	Exposure to vapor or mist may irritate respiratory tract and cause coughing. Inhalation of high concentrations may cause pulmonary edema.
<b>Eye Contact</b>	Corrosive. May cause severe damage to eyes.
<b>Skin Contact</b>	May cause severe irritation to skin. Prolonged contact may cause burns to skin.
<b>Ingestion</b>	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.

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**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**

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	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.

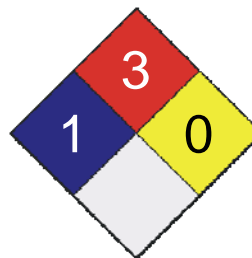
**End of Safety Data Sheet**

## 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

<b>Routes of exposure</b>	Eye, Skin contact, Inhalation, Ingestion.
<b>Eyes</b>	Causes moderate eye irritation.
<b>Skin</b>	Moderately irritating to the skin.
<b>Inhalation</b>	None expected during normal conditions of use. However intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
<b>Ingestion</b>	Contains denatured ethyl alcohol. May be harmful if swallowed.
<b>Target organs</b>	Blood. Liver. Respiratory system. Central nervous system. Heart.
<b>Chronic effects</b>	Prolonged or repeated exposure can cause drying, defatting and dermatitis.
<b>Signs and symptoms</b>	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](http://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](http://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	<b>ACGIH-TLV</b> Not established <b>OSHA-PEL</b> Not established
Butane	<b>ACGIH-TLV</b> TWA: 1000 ppm <b>OSHA-PEL</b> Not established
Ethanol	<b>ACGIH-TLV</b> TWA: 1000 ppm STEL: 1000 ppm <b>OSHA-PEL</b> TWA: 1000 ppm
Propane	<b>ACGIH-TLV</b> TWA: 1000 ppm <b>OSHA-PEL</b> 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.

<b>Hand protection</b>	Not normally required when used as directed. Avoid contact with the skin. Emergency responders should wear impermeable gloves.
<b>Skin and body protection</b>	As required by employer code.
<b>Respiratory protection</b>	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.
<b>General hygiene considerations</b>	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.

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## 9. Physical and Chemical Properties

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

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## 10. Stability and Reactivity

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<b>Reactivity</b>	This product may react with strong oxidizing agents.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Conditions to avoid</b>	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.
<b>Incompatible materials</b>	Oxidizers.
<b>Hazardous decomposition products</b>	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

<b>Eye</b>	Causes moderate eye irritation.
<b>Skin</b>	Moderately irritating to the skin.
<b>Inhalation</b>	None expected during normal conditions of use. However intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
<b>Ingestion</b>	Contains denatured ethyl alcohol. May be harmful if swallowed.
<b>Sensitization</b>	The finished product is not expected to have chronic health effects.
<b>Chronic effects</b>	The finished product is not expected to have chronic health effects.
<b>Carcinogenicity</b>	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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<b>Mutagenicity</b>	The finished product is not expected to have chronic health effects.
<b>Reproductive effects</b>	The finished product is not expected to have chronic health effects.
<b>Teratogenicity</b>	The finished product is not expected to have chronic health effects.
<b>Name of Toxicologically Synergistic Products</b>	Not available

## 12. Ecological Information

<b>Ecotoxicity</b>	Components of this product have been identified as having potential environmental concerns.	
<b>Ecotoxicity - Freshwater Fish - Acute Toxicity Data</b>		
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]
<b>Ecotoxicity - Water Flea - Acute Toxicity Data</b>		
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]
<b>Persistence / degradability</b>	Not available	
<b>Bioaccumulation / accumulation</b>	Not available	
<b>Mobility in environmental media</b>	Not available	
<b>Environmental effects</b>	Not available	
<b>Aquatic toxicity</b>	Not available	
<b>Partition coefficient</b>	Not available	
<b>Chemical fate information</b>	Not available	

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## 13. Disposal Considerations

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

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## 14. Transport Information

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### 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.

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## 15. Regulatory Information

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### 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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Isopropyl Alcohol	67-63-0	>= 1 - < 5
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**SECTION 4. FIRST AID MEASURES**

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

**SECTION 5. FIREFIGHTING MEASURES**

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



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

**Biological occupational exposure limits**

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

**Personal protective equipment**

- Respiratory protection : No personal respiratory protective equipment normally required.
- Hand protection : No special protective equipment required.
- 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 <sup>3</sup>
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 <sup>2</sup> /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.

## 550RD 550X POLYMER

### DESCRIPTION

**550RD/550X** is a highly dispersible, slightly anionic, dry synthetic polymer that minimizes fisheyes when mixing allowing for more consistent yields and less waste in minimal shear environments. Requires minimal shearing to yield very consistently and quickly compared to semi synthetic or natural polymers.

### PRIMARY FUNCTIONS

- High viscosity for cuttings transport with minimal product usage
- Nontoxic for use in environmentally sensitive applications

### SECONDARY FUNCTIONS

These functions serve as supplemental benefits of this products use when mixed accordingly.

- Reduced torque and tubular wear compared to straight water applications
- Increased rate of penetration in directional and horizontal wells
- Reduction in storage on site, volume of supplies and transport costs over liquid product
- Shale and clay encapsulation that reduces swelling and increases well bore stability

### MIXING

**550RD 550X** can be mixed readily in fresh water. Sprinkle slowly onto agitated, turbulent water. Hydration is almost immediate. 1-1.5 kg/m<sup>3</sup> is generally sufficient for normal vertical drilling applications. In unconsolidated or broken formations that are prone to sloughing or in water reactive clay or shale the concentration should be increased to 1.5-2.5kg/m<sup>3</sup>. This product is sensitive to high salinity, if mixing in salt water contact Di-Corp rep for specialized instruction.

### ENVIRONMENT

**Dangerous components:** None

**Potentially dangerous impurities:** None

**Physical properties:** White solid at 20 Degrees C

**Measures to be taken after leakage or accidental spilling:** Wash abundantly with water and bleach

**Inflammability or danger of explosion:** None

**Poisonous properties:** Non-toxic, slightly basic

**First Aid measures:** Wash with water

### PACKAGING

20 kg. High impact plastic pail with handle.

# MATERIAL SAFETY DATA SHEET



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**EXTREME ALKAMER**

**EMERGENCY PHONE NO. (604) 575-6660**

**PAGE 1 OF 5**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 1  
FIRE 1  
REACTIVITY 0  
OTHER: B (GLASSES & GLOVES)

### HAZARD RATING:

0 LEAST  
1 SLIGHT  
2 MODERATE  
3 HIGH  
4 EXTREME

## SECTION 1

## PRODUCT IDENTIFICATION

PRODUCT NAME: EXTREME ALKAMER  
CHEMICAL IDENTIFICATION: Anionic copolymer of acrylamide, and acrylate emulsion  
MATERIAL USE: Viscosifier, clay inhibitor  
WHMIS CLASSIFICATION: Class D-2(B)  
WORK PLACE HAZARD: Skin, eye irritant

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: Not dangerous goods  
PACKAGE GROUP: Not applicable  
CAS NUMBER: 25085-02-3  
MSDS CODE: Not available

## SECTION 2

## HAZARDOUS INGREDIENTS

INGREDIENT:	MINERAL SPIRITS	ALKYL PHENOL ETHOXYLATE
PERCENTAGE:	20 -40	3 - 7
CAS NUMBER:	64742-47-8	9016-45-9
LD (50):	6480 Mg/Kg.	3000 Mg/Kg.
LC (50):	Not available	Not determined

EXTREME ALKAMER

**MATERIAL SAFETY DATA SHEET****SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	Off white liquid, mild odour
DENSITY (SPECIFIC GRAVITY):	Less than 1.0
BOILING POINT:	290°C
MELTING POINT:	Not applicable
SOLUBILITY:	Soluble
EVAPORATION RATE: (EE=1):	Not available
VAPOUR PRESSURE: (MM HG):	Not available
VAPOUR DENSITY: (AIR = 1):	Not available

**SECTION 4****FIRE AND EXPLOSION**

FLASHPOINT:	> 200°C
FLAMMABLE LIMIT:	Not available
AUTO IGNITION TEMP:	No data
EXTINGUISHING MEDIA:	Dry chemical, carbon dioxide, foam, water spray, water will cause extreme slipperiness
SPECIAL FIRE FIGHTING PROCEDURES:	Self-contained respirators for fire fighting personnel.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Sensitivity to static charge.

**SECTION 5****REACTIVITY DATA**

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizing and reducing agents
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	Not available

EXTREME ALKAMER

**MATERIAL SAFETY DATA SHEET****SECTION 6****HEALTH HAZARDS**

## ROUTE OF ENTRY:

(X) SKIN                      (X) EYE CONTACT                      ( ) INHALATION                      (X) INGESTION

## SKIN CONTACT:

May be minimally irritating to sensitive skin upon direct contact.

## EYE CONTACT:

May cause stinging, burning of eyes and lids, inflammation and discomfort.

## INHALATION:

Not available.

## INGESTION:

May cause nausea, vomiting.

**SECTION 7****PREVENTATIVE MEASURES**

## SKIN PROTECTION:

Impervious gloves, protective clothing as required

## EYE PROTECTION:

Chemical goggles.

## VENTILATION:

None required for normal use. 10 changes per hour.

## RESPIRATORY PROTECTION:

None required for normal use. Otherwise approved organic vapour-type respirator.

## LEAK &amp; SPILL PROCEDURE:

Eliminate sources of ignition. Absorb with earth or sand and dispose with solid waste. Wash site after collection.

## WASTE DISPOSAL:

Dispose in compliance with government regulations and local requirements.

## STORAGE REQUIREMENTS:

Cool, dry area, away from sources of heat, oxidizing and reducing agents. Keep containers closed when not in use.

**EXTREME ALKAMER****MATERIAL SAFETY DATA SHEET****SECTION 8****FIRST AID MEASURES**

SKIN: Wash thoroughly with soap and warm water  
EYE: Flush with water for at least 15 minutes.  
INHALATION: Vapour pressure is negligible. Remove victim from further exposure.  
INGESTION: Do not induce vomiting. If conscious, dilute by giving two glasses of water. Seek medical attention.

**SECTION 9****PREPARATION DATE**

DATE ISSUED: AUGUST 20, 2009  
DATE REVISED: JANUARY 1, 2012  
BY: PRODUCT SAFETY COMMITTEE

THE DATA REPRESENTED HEREIN IS BELIEVED ACCURATE AND REFLECTS OUR BEST PROFESSIONAL JUDGMENT. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY USE, OR ANY OTHER WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF SUCH DATA, THE RESULTS TO BE OBTAINED FROM THE USE THEREOF, OR THAT ANY SUCH USE DOES NOT INFRINGE ANY PATENT. SINCE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS OF USE BEYOND OUR CONTROL AND WITH WHICH WE MAY BE UNFAMILIAR, WE DO NOT ASSUME ANY RESPONSIBILITY FOR THE RESULTS OF SUCH APPLICATION. THIS INFORMATION IS FURNISHED UPON THE CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS OWN DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR HIS PARTICULAR PURPOSE.

## MATERIAL SAFETY DATA SHEET

## ADDENDUM

SECTION 10ECOLOGICAL INFORMATION

This product has very low acute toxicity.

## ACUTE TOXICITY:

- Oral: LD50/oral/rat > 5000 mg/kg
- Dermal: The product is not toxic in contact with the skin.
- Inhalation: The product is not expected to be toxic by inhalation.

## IRRITATION:

- Skin: The results obtained using OECD test 404 demonstrated that the product was irritating to the skin.
- Eyes: Irritating to eyes.

## SENSITIZATION:

The product is not expected to be sensitizing.

ECOTOXICITY

The product has very low toxicity to aquatic organisms or to the aquatic environment. However, as with all chemical products, do not introduce directly into the environment.

- Fish: LC50 / Fathead minnows / 96 hours > 1000 mg/l
  - Algae: EC50 / 72h / Pheodactylum tricournumtum > 1000 mg/l
  - Daphnie: LC50 / 48h / Chastogrammus marinus<sup>3</sup> 15 mg/l
- Bioaccumulation: The product is not expected to bioaccumulate.  
Persistence / degradability: Not readily biodegradable.

# MATERIAL SAFETY DATA SHEET



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**EXTREME CLAY SEAM**

**EMERGENCY PHONE NO. (604) 575-6660**

**PAGE 1 OF 4**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 1  
FIRE 1  
REACTIVITY 0  
OTHER: B (GLASSES & GLOVES)

### HAZARD RATING:

0 LEAST  
1 SLIGHT  
2 MODERATE  
3 HIGH  
4 EXTREME

## SECTION 1

## PRODUCT IDENTIFICATION

PRODUCT NAME: EXTREME CLAY SEAM  
CHEMICAL IDENTIFICATION: Polyacrylic Acid  
MATERIAL USE: Specialty Clay Dispersant  
WHMIS CLASSIFICATION: Class D-2B  
WORK PLACE HAZARD: Skin, Eye Irritant

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: Not Dangerous Goods  
PACKAGE GROUP: Not Applicable  
CAS NUMBER: 9003-01-4:2  
MSDS CODE: Not Applicable

## SECTION 2

## HAZARDOUS INGREDIENTS

INGREDIENT: Polyacrylic Acid  
PERCENTAGE: 30 - 60%  
CAS NUMBER: 9003-01-4:2  
LD (50): Not Available  
LC (50): Not Available

## EXTREME CLAY SEAM

**MATERIAL SAFETY DATA SHEET****SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	Liquid, water white to straw colour, mild odour
DENSITY (SPECIFIC GRAVITY):	1.3
BOILING POINT:	> 100°C
MELTING POINT:	Not Applicable
SOLUBILITY:	Soluble
EVAPORATION RATE: (EE=1):	Slower than butyl acetate
VAPOUR PRESSURE: (MM HG):	< 17.5
VAPOUR DENSITY: (AIR = 1):	Same as air
pH:	5.0 - 7.0

**SECTION 4****FIRE AND EXPLOSION**

FLASHPOINT:	> 100°C PMCC
FLAMMABLE LIMIT:	Not available
AUTO IGNITION TEMP:	No data
EXTINGUISHING MEDIA:	Dry chemical, carbon dioxide, foam, water spray
SPECIAL FIRE FIGHTING PROCEDURES:	Self-contained respirators for fire fighting personnel.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Acrid smoke may be generated while burning. carbon monoxide, carbon dioxide, and other oxides may be generated as products of combustion.

**SECTION 5****REACTIVITY DATA**

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizing agents and reducing agents, contamination with reactive substances, excessive heat
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	Acrid smoke, fumes when heated to decomposition. Oxides of carbon.

## EXTREME CLAY SEAM

## MATERIAL SAFETY DATA SHEET

**SECTION 6****HEALTH HAZARDS**

## ROUTE OF ENTRY:

(X) SKIN

(X) EYE CONTACT

(X) INHALATION

(X) INGESTION

## SKIN CONTACT:

May be minimally irritating to sensitive skin upon prolonged direct contact.

## EYE CONTACT:

May be minimally irritating to eyes upon direct contact.

## INHALATION:

Product has low vapour pressure and is not expected to present a hazard at ambient temperatures. Caution should be taken to avoid misting.

## INGESTION:

Product is practically non toxic by ingestion.

**SECTION 7****PREVENTATIVE MEASURES**

## SKIN PROTECTION:

Impervious gloves, protective clothing as required

## EYE PROTECTION:

Chemical goggles.

## VENTILATION:

None required for normal use. Adequate ventilation required if mist is generated.

## RESPIRATORY PROTECTION:

Use NIOSH - Approved air-purifying respirator if vapours are generated.

## LEAK &amp; SPILL PROCEDURE:

Absorb with earth or sand and dispose of with solid waste. Wash site after spilled material has been collected.

## WASTE DISPOSAL:

Dispose in compliance with government regulations and local requirements.

## STORAGE REQUIREMENTS:

Cool, dry area, away from sources of heat, alkalis, oxidizing and reducing agents. Keep containers closed when not in use.

**EXTREME CLAY SEAM****MATERIAL SAFETY DATA SHEET****SECTION 8****FIRST AID MEASURES**

SKIN:

Wash thoroughly with soap and warm water

EYE:

Flush with water for at least 15 minutes.

INHALATION:

Vapour pressure is negligible. Remove victim from further exposure.

INGESTION:

Do not induce vomiting. If conscious, dilute by giving two glasses of water. Seek medical attention.

**SECTION 9****PREPARATION DATE**

DATE ISSUED:

AUGUST 20, 2009

DATE REVISED:

JANUARY 01, 2012

BY:

PRODUCT SAFETY COMMITTEE

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# AMC CR 650™

AMC

Chemwatch Hazard Alert Code: 0

Chemwatch: 4902-92

Issue Date: 01/09/2018

Version No: 14.1.1.1

Print Date: 10/15/2019

Safety Data Sheet according to WHMIS 2015 requirements

L.GHS.CAN.EN

## SECTION 1 IDENTIFICATION

### Product Identifier

Product name	AMC CR 650™
Synonyms	PHPA
Other means of identification	Not Available

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

Relevant identified uses	Drilling fluid additive.
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### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	AMC
Address	1220 N. 2200 W. Suite# 600, Salt Lake City UT 84116 United States
Telephone	801-364-0233
Fax	801-364-0278
Website	www.amcmud.com
Email	amc@imdexlimited.com

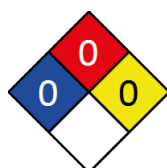
### Emergency phone number

Association / Organisation	AMC	CHEMWATCH EMERGENCY RESPONSE
Emergency telephone numbers	Chemwatch - (1) 877 715 9305	+61 2 9186 1132
Other emergency telephone numbers	-	Not Available

## SECTION 2 HAZARD(S) IDENTIFICATION

### Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

### CANADIAN WHMIS SYMBOLS

Classification	Not Applicable
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### Label elements

Hazard pictogram(s)	Not Applicable
---------------------	----------------

SIGNAL WORD	NOT APPLICABLE
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**Hazard statement(s)**

Not Applicable

**Physical and Health hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) General**

<b>P101</b>	If medical advice is needed, have product container or label at hand.
<b>P102</b>	Keep out of reach of children.

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

Not Applicable

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
Not Available	100	Ingredients determined not to be hazardous

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**SECTION 4 FIRST-AID MEASURES****Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If dust is inhaled, remove from contaminated area.</li> <li>▶ Encourage patient to blow nose to ensure clear passage of breathing.</li> <li>▶ If irritation or discomfort persists seek medical attention.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Seek medical advice.</li> </ul>

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

Treat symptomatically.

**SECTION 5 FIRE-FIGHTING MEASURES****Extinguishing media**

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

**Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	None known.
-----------------------------	-------------

**Special protective equipment and precautions for fire-fighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn.</li> </ul> <p>Decomposes on heating and produces toxic fumes of: carbon monoxide (CO) carbon dioxide (CO2) nitrogen oxides (NOx)</p>

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

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

See section 8

**Environmental precautions**

See section 12

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

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid contact with skin and eyes.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7 HANDLING AND STORAGE**

**Precautions for safe handling**

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Limit all unnecessary personal contact.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> </ul>

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

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Lined metal can, lined metal pail/ can.</li> <li>▶ Plastic pail.</li> </ul>
<b>Storage incompatibility</b>	Avoid contamination of water, foodstuffs, feed or seed.

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Control parameters**

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available


**EMERGENCY LIMITS**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
AMC CR 650™	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
AMC CR 650™	Not Available	Not Available

**MATERIAL DATA**

**Exposure controls**

<b>Appropriate engineering controls</b>	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>▶ polychloroprene.</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<p>No special equipment needed when handling small quantities.</p> <p><b>OTHERWISE:</b></p> <ul style="list-style-type: none"> <li>▶ Overalls.</li> </ul>

## Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3 Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

\* - Negative pressure demand \*\* - Continuous flow

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	White powder, soluble in water.		
<b>Physical state</b>	Divided Solid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Applicable
<b>pH (as supplied)</b>	Not Applicable	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	>150	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Applicable	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Applicable

Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Applicable	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	5.0-9.0 (@ 5 g/L)
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Available

## SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.  Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness.
AMC CR 650™	TOXICITY
	Not Available
AMC CR 650™	IRRITATION
	Not Available
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

AMC CR 650™	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE

	Not Available	Not Available	Not Available	Not Available	Not Available
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

**DO NOT** discharge into sewer or waterways.

May be harmful to fauna if not disposed of according to Section 13 and legislative requirements. [AMC]

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

### Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

### Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

Product / Packaging disposal	
	<ul style="list-style-type: none"> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Management Authority for disposal.</li> </ul>

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

Marine Pollutant	
	NO

**Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

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

### National Inventory Status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	Yes
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes

Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - ARIPS	Yes
<b>Legend:</b>	<p><i>Yes = All CAS declared ingredients are on the inventory</i></p> <p><i>No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)</i></p>

## SECTION 16 OTHER INFORMATION

<b>Revision Date</b>	01/09/2018
<b>Initial Date</b>	Not Available

## SDS Version Summary

Version	Issue Date	Sections Updated
13.1.1.1	10/12/2017	Appearance, Environmental, Fire Fighter (fire/explosion hazard), Ingredients, Physical Properties, Supplier Information, Use
14.1.1.1	01/09/2018	Name

## Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

## Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average  
 PC—STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit.  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value  
 BCF: BioConcentration Factors  
 BEI: Biological Exposure Index

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The product is with a concentration less than 5% in a drilling fluid as a non-hazardous chemical classified.

# 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

<b>Response</b>	: 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.
<b>Storage</b>	: Not applicable.
<b>Disposal</b>	: Not applicable.
<b>Hazards not otherwise classified</b>	: None known.

## Section 3. Composition/information on ingredients

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

### CAS number/other identifiers

<b>CAS number</b>	: Not applicable.
<b>Product code</b>	:

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

<b>Eye contact</b>	: 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.
<b>Inhalation</b>	: 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.
<b>Skin contact</b>	: 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	<b>ACGIH TLV (United States, 6/2013).</b> TWA: 0.5 mg/m <sup>3</sup> , (as Sb) 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 0.5 mg/m <sup>3</sup> , (as Sb) 8 hours. <b>NIOSH REL (United States, 4/2013).</b> TWA: 0.5 mg/m <sup>3</sup> , (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 <sub>ow</sub>	BCF	Potential
Butene, homopolymer	7.6 to 7.8	314 to 1882	high

### Mobility in soil

- Soil/water partition coefficient (K<sub>oc</sub>)** : 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**

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

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	%
<b>Form R - Reporting requirements</b>	Antimony, dialkyl dithiocarbamate	15890-25-2	5 - 10
<b>Supplier notification</b>	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

<b>Version</b>	: 1
<b>Revised Section(s)</b>	: Not applicable.
<b>Prepared by</b>	: KMK Regulatory Services Inc.
<b>Key to abbreviations</b>	: 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.



# MATERIAL SAFETY DATA SHEET



102-17910 55 Ave., Surrey, BC, Canada V3S 6C8 • Toll Free 1-866-535-6699  
Tel: 604-575-6660 Fax: 604-575-5494 e-mail: extreme.ron@telus.net

**EXTREME ENVIRO COTE**

**EMERGENCY PHONE NO. (604) 575-6660**

**PAGE 1 OF 4**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 0  
FIRE 1  
REACTIVITY 0  
OTHER: B (GLASSES & GLOVES)

### HAZARD RATING:

0 LEAST  
1 SLIGHT  
2 MODERATE  
3 HIGH  
4 EXTREME

## SECTION 1

## PRODUCT IDENTIFICATION

PRODUCT NAME: EXTREME ENVIRO COTE  
CHEMICAL IDENTIFICATION: Base Oil and Additives  
MATERIAL USE: Lubricating Grease  
WHMIS CLASSIFICATION: N/A  
WORK PLACE HAZARD: N/A

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: Not Dangerous Goods  
PACKAGE GROUP: N/A  
CAS NUMBER: N/A  
MSDS CODE: N/A

## SECTION 2

## HAZARDOUS INGREDIENTS

INGREDIENT: Base Oil and Additives  
PERCENTAGE: 100%  
CAS NUMBER: 471-34-1  
LD (50): (Rat) >2000mg/kg MINIMALLY TOXIC  
LC (50): (Rat) >5000mg/m<sup>3</sup> MINIMALLY TOXIC

## EXTREME ENVIRO COTE

**MATERIAL SAFETY DATA SHEET****SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	Semi Fluid, White, Slight Hydrocarbon Odor
DENSITY (SPECIFIC GRAVITY):	0.88
BOILING POINT:	>371°C
MELTING POINT:	Not Available
SOLUBILITY:	Negligible
EVAPORATION RATE: (EE=1):	Not Available
VAPOUR PRESSURE: (MM HG):	>0.013 kPa
VAPOUR DENSITY: (AIR = 1):	Not Available

**SECTION 4****FIRE AND EXPLOSION**

FLASHPOINT:	249°C
FLAMMABLE LIMIT:	Not Available
AUTO IGNITION TEMP:	Not Available
EXTINGUISHING MEDIA:	Dry Chemical, Foam, Water Fog, CO <sub>2</sub> , Do Not Spray with Straight Streams of Water
SPECIAL FIRE FIGHTING PROCEDURES:	Prevent runoff from fire control from entering streams, watercourses and drinking water sources.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None currently known.

**SECTION 5****REACTIVITY DATA**

STABILITY (THERMAL, LIGHT, ETC.):	Stable under normal conditions
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong Oxidizers
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	Material does not decompose at ambient temperatures

## EXTREME ENVIRO COTE

**MATERIAL SAFETY DATA SHEET****SECTION 6****HEALTH HAZARDS**

## ROUTE OF ENTRY:

(X) SKIN

(X) EYE CONTACT

(X) INHALATION

(X) INGESTION

## SKIN CONTACT:

If product is injected into or under the skin the individual should be evaluated immediately by a physician as a surgical emergency.

## EYE CONTACT:

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

## INHALATION:

No protection is ordinarily required under normal conditions of use with adequate ventilation.

## INGESTION:

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

**SECTION 7****PREVENTATIVE MEASURES**

## SKIN PROTECTION:

Impervious gloves and protective clothing as required.

## EYE PROTECTION:

No special requirements under normal conditions.

## VENTILATION:

No special requirements under normal conditions.

## RESPIRATORY PROTECTION:

None required under normal use.

## LEAK &amp; SPILL PROCEDURE:

Contain and gather up with use of absorbent material.

## WASTE DISPOSAL:

Dispose of in compliance with local and government regulations.

## STORAGE REQUIREMENTS:

Store in a cool, dry area. Keep containers closed when not in use.

## EXTREME ENVIRO COTE

**MATERIAL SAFETY DATA SHEET****SECTION 8****FIRST AID MEASURES**

SKIN:	Wipe excess from skin. Wash with mild soap and water. If product is injected into or under the skin the individual should be evaluated immediately by a physician as a surgical emergency.
EYE:	Flush thoroughly with water for at least 15 minutes. If irritation occurs seek medical attention.
INHALATION:	At normal handling temperatures, minimal or no irritation due to inhalation.
INGESTION:	First aid is normally not required. Seek medical attention if discomfort occurs.

**SECTION 9****PREPARATION DATE**

DATE ISSUED:	AUGUST 20, 1996
DATE REVISED:	JANUARY 01, 2012
BY:	PRODUCT SAFETY COMMITTEE

THE DATA REPRESENTED HEREIN IS BELIEVED ACCURATE AND REFLECTS OUR BEST PROFESSIONAL JUDGMENT. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY USE, OR ANY OTHER WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF SUCH DATA, THE RESULTS TO BE OBTAINED FROM THE USE THEREOF, OR THAT ANY SUCH USE DOES NOT INFRINGE ANY PATENT. SINCE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS OF USE BEYOND OUR CONTROL AND WITH WHICH WE MAY BE UNFAMILIAR, WE DO NOT ASSUME ANY RESPONSIBILITY FOR THE RESULTS OF SUCH APPLICATION. THIS INFORMATION IS FURNISHED UPON THE CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS OWN DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR HIS PARTICULAR PURPOSE.

# MATERIAL SAFETY DATA SHEET

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT

**Product Name:** MOBILUX EP 2  
**Product Description:** Base Oil and Additives  
**MSDS Number:** 6482  
**Product Code:** 2015A0208050  
**Intended Use:** Grease

### COMPANY IDENTIFICATION

**Supplier:** Imperial Oil Downstream  
240 4th Avenue  
Calgary, ALBERTA. T2P 3M9 Canada  
**24 Hour Environmental / Health Emergency** 1-866-232-9563  
**Telephone**  
**Transportation Emergency Phone Number** 1-866-232-9563  
**Product Technical Information** 1-800-268-3183  
**Supplier General Contact** 1-800-567-3776

## SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

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

## SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines see Section 15.

### HEALTH EFFECTS

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

<b>NFPA Hazard ID:</b>	Health: 0	Flammability: 1	Reactivity: 0
<b>HMIS Hazard ID:</b>	Health: 0	Flammability: 1	Reactivity: 0

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

## SECTION 4 FIRST AID MEASURES

### INHALATION

Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

## SKIN CONTACT

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

## EYE CONTACT

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

## INGESTION

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

## SECTION 5 FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight streams of water

### FIRE FIGHTING

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

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

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** >204°C (400°F) [EST. FOR OIL, ASTM D-92 (COC)]

**Flammable Limits (Approximate volume % in air):** LEL: N/D UEL: N/D

**Autoignition Temperature:** N/D

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### NOTIFICATION PROCEDURES

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

### PROTECTIVE MEASURES

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

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

## SPILL MANAGEMENT

**Land Spill:** Allow spilled material to solidify and shovel it up into a suitable container for recycle or disposal. Scrape up spilled material with shovels into a suitable container for recycle or disposal.

**Water Spill:** Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface

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

## ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas.

## SECTION 7

## HANDLING AND STORAGE

### HANDLING

Prevent small spills and leakage to avoid slip hazard.

**Static Accumulator:** This material is not a static accumulator.

### STORAGE

Do not store in open or unlabelled containers.

## SECTION 8

## EXPOSURE CONTROLS / PERSONAL PROTECTION

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

### ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:  
No special requirements under ordinary conditions of use and with adequate ventilation.

### PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications,

handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

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

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

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

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

No protection is ordinarily required under normal conditions of use.

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

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

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

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

## ENVIRONMENTAL CONTROLS

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

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

### GENERAL INFORMATION

**Physical State:** Solid  
**Form:** Semi-fluid  
**Colour:** Brown  
**Odour:** Characteristic  
**Odour Threshold:** N/D

### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 °C):** 0.92  
**Flash Point [Method]:** >204°C (400°F) [EST. FOR OIL, ASTM D-92 (COC)]

**Flammable Limits (Approximate volume % in air):** LEL: N/D UEL: N/D  
**Autoignition Temperature:** N/D  
**Boiling Point / Range:** > 316°C (600°F)  
**Vapour Density (Air = 1):** N/D  
**Vapour Pressure:** < 0.013 kPa (0.1 mm Hg) at 20°C  
**Evaporation Rate (n-butyl acetate = 1):** N/D  
**pH:** N/A  
**Log Pow (n-Octanol/Water Partition Coefficient):** > 3.5  
**Solubility in Water:** Negligible  
**Viscosity:** 150 cSt (150 mm<sup>2</sup>/sec) at 40°C  
**Oxidizing Properties:** See Hazards Identification Section.

**OTHER INFORMATION**

**Freezing Point:** N/D  
**Melting Point:** N/D  
**DMSO Extract (mineral oil only), IP-346:** < 3 %wt  
**Decomposition Temperature:** N/D

NOTE: Most physical properties above are for the oil component in the material.

<b>SECTION 10</b>	<b>STABILITY AND REACTIVITY</b>
-------------------	---------------------------------

**STABILITY:** Material is stable under normal conditions.

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

**MATERIALS TO AVOID:** Strong oxidizers

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

**HAZARDOUS POLYMERIZATION:** Will not occur.

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
-------------------	----------------------------------

**ACUTE TOXICITY**

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

**CHRONIC/OTHER EFFECTS**

**Contains:**

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

**CMR Status:**

Chemical Name	CAS Number	List Citations
SOLVENT DEWAXED RESIDUAL OIL (PETROLEUM)	64742-62-7	1, 6

--REGULATORY LISTS SEARCHED--

1 = IARC 1  
 2 = IARC 2A

3 = IARC 2B  
 4 = ACGIH ALL

5 = ACGIH A1  
 6 = ACGIH A2

**SECTION 12 ECOLOGICAL INFORMATION**

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

**ECOTOXICITY**

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

**MOBILITY**

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

**PERSISTENCE AND DEGRADABILITY**

**Biodegradation:**

Base oil component -- Expected to be inherently biodegradable

**BIOACCUMULATION POTENTIAL**

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

**SECTION 13 DISPOSAL CONSIDERATIONS**

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

## DISPOSAL RECOMMENDATIONS

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

## REGULATORY DISPOSAL INFORMATION

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

<b>SECTION 14</b>	<b>TRANSPORT INFORMATION</b>
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**LAND (TDG):** Not Regulated for Land Transport

**LAND (DOT):** Not Regulated for Land Transport

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

**AIR (IATA):** Not Regulated for Air Transport

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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**WHMIS Classification:** Not controlled

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

**CEPA:** All components of this material are either on the Canadian Domestic Substances List (DSL), exempt, or have been notified under CEPA.

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

**Special Cases:**

Inventory	Status
AICS	Restrictions Apply

**The Following Ingredients are Cited on the Lists Below:**

Chemical Name	CAS Number	List Citations
ZINC DITHIOPHOSPHATE	68649-42-3	6

--REGULATORY LISTS SEARCHED--

1 = TSCA 4  
2 = TSCA 5a2  
3 = TSCA 5e  
4 = TSCA 6  
5 = TSCA 12b  
6 = NPRI

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

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Revision Changes:

- Section 06: Protective Measures information was modified.
- Section 11: Tox Table - Header information was modified.
- Section 06: Accidental Release - Protective Measures - Header information was added.
- Section 11: Chemical Name - Header information was added.
- Section 11: CAS Number - Header information was added.
- Section 11: List Citation - Header information was added.
- Section 11: Tox List Cited Table information was added.

-----  
WHMIS Classification: Not controlled

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Prepared by: Imperial Oil Limited, IH and Product Safety

# MATERIAL SAFETY DATA SHEET



102 17910 – 55 Ave., Surrey, BC, Canada V3S 6C8 • Toll Free 1-866-535-6699  
Tel: 604-575-6660 Fax: 604-575-5494 e-mail: extreme.ron@telus.net

## EXTREME EXTRA HIGH YIELD GEL

EMERGENCY PHONE NO. (604) 575-6660

PAGE 1 OF 4

### WHMIS HAZARD INDEX:

#### DEGREE OF HAZARD:

HEALTH 1  
FIRE 0  
REACTIVITY 1  
OTHER: B (GLASSES & GLOVES)

#### HAZARD RATING:

0 LEAST  
1 SLIGHT  
2 MODERATE  
3 HIGH  
4 EXTREME

### SECTION 1

### PRODUCT IDENTIFICATION

PRODUCT NAME: EXTREME EXTRA HIGH YIELD GEL  
CHEMICAL IDENTIFICATION: Sodium Montmorillonite  
MATERIAL USE: Drilling Mud Additive  
WHMIS CLASSIFICATION: D-2(A)  
WORK PLACE HAZARD: Low concentrations of free silica in airborne dust.  
Limited evidence as a Carcinogen from inhaled crystalline silica.

### TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: Not Dangerous Goods  
PACKAGE GROUP: Not Applicable  
CAS NUMBER: 1302-78-9  
MSDS CODE: Not Applicable

### SECTION 2

### HAZARDOUS INGREDIENTS

INGREDIENT:	Crystalline Silica (SiO <sub>2</sub> )	Crystobalite	Tridymite	Bentonite Dust
PERCENTAGE:	See Below	See Below	See Below	See Below
CAS NUMBER:	14808-60-7	14469-46-1	15468-32-3	1302-78-9
LD (50):	Not Determined	Not Determined	N/D	N/D
LC (50):	Not Determined	Not Determined	N/D	N/D
OSHA PEL:	.1 mg/M <sup>3</sup>	.05 mg/M <sup>3</sup>	.05 mg/M <sup>3</sup>	5 mg/M <sup>3</sup>
ACGIH TVL:	.1 mg/M <sup>3</sup>	.05 mg/M <sup>3</sup>	.05 mg/M <sup>3</sup>	N/D

## EXTREME EXTRA HIGH YIELD GEL

**MATERIAL SAFETY DATA SHEET****SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	Bluegray to green as moist solid, light tan to gray as dry powder. No odour.
DENSITY (SPECIFIC GRAVITY):	2.4 - 2.55
BOILING POINT:	Not Applicable
MELTING POINT:	Approx. 1450°C
SOLUBILITY:	Insoluble, forms colloidal suspension.
EVAPORATION RATE: (EE=1):	N/A
VAPOUR PRESSURE: (MM HG):	N/A
VAPOUR DENSITY: (AIR = 1):	N/A

**SECTION 4****FIRE AND EXPLOSION**

FLASHPOINT:	N/A
FLAMMABLE LIMIT:	N/A
AUTO IGNITION TEMP:	N/A
EXTINGUISHING MEDIA:	None for product. Any media for packaging.
SPECIAL FIRE FIGHTING PROCEDURES:	None
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None. Product becomes slippery when wet.

**SECTION 5****REACTIVITY DATA**

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	None
HAZARDOUS POLYMERIZATION:	None
HAZARDOUS DECOMPOSITION PRODUCTS:	None

---

**MATERIAL SAFETY DATA SHEET****EXTREME EXTRA HIGH YIELD GEL****SECTION 6****HEALTH HAZARDS**

## ROUTE OF ENTRY:

 SKIN EYE CONTACT INHALATION INGESTION

## SKIN CONTACT:

## EYE CONTACT:

## INHALATION:

Possible drying resulting in dermatitis.

Mechanical Irritant

Acute (short term): Dust levels exceeding PEL may cause irritation of upper respiratory tract.

Chronic (long term): Exposure to dust levels higher than TLV may lead to silicosis or other respiratory problems.

## INGESTION:

No adverse effects.

**SECTION 7****PREVENTATIVE MEASURES**

## SKIN PROTECTION:

## EYE PROTECTION:

## VENTILATION:

## RESPIRATORY PROTECTION:

## LEAK &amp; SPILL PROCEDURE:

## WASTE DISPOSAL:

## STORAGE REQUIREMENTS:

Generally not necessary.

Goggles may be preferred if dusty conditions develop.

Mechanical, general room ventilation. Use local ventilation to maintain REL's/TLV's.

Use respirators approved by NIOSH/MSHA for silica dust.

Avoid breathing dust. Wear silica approved respirator. Vacuum up to avoid generating dust.

Avoid using water, product becomes slippery.

Dispose of in compliance with local and government regulations.

Store in dry area. Product becomes slippery when wet.

**EXTREME EXTRA HIGH YIELD GEL**

**MATERIAL SAFETY DATA SHEET**

**SECTION 8**

**FIRST AID MEASURES**

SKIN:	Wash with soap and water until clean.
EYE:	Flush with water until irritation ceases.
INHALATION:	Move to dust free area. Inhalation may aggravate existing respiratory illness. Seek medical attention if symptoms persist.
INGESTION:	No adverse effects from small quantities.

**SECTION 9**

**PREPARATION DATE**

DATE ISSUED:	AUGUST 20, 1996
DATE REVISED:	JANUARY 01, 2012
BY:	PRODUCT SAFETY COMMITTEE

THE DATA REPRESENTED HEREIN IS BELIEVED ACCURATE AND REFLECTS OUR BEST PROFESSIONAL JUDGMENT. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY USE, OR ANY OTHER WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF SUCH DATA, THE RESULTS TO BE OBTAINED FROM THE USE THEREOF, OR THAT ANY SUCH USE DOES NOT INFRINGE ANY PATENT. SINCE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS OF USE BEYOND OUR CONTROL AND WITH WHICH WE MAY BE UNFAMILIAR, WE DO NOT ASSUME ANY RESPONSIBILITY FOR THE RESULTS OF SUCH APPLICATION. THIS INFORMATION IS FURNISHED UPON THE CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS OWN DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR HIS PARTICULAR PURPOSE.

# MATERIAL SAFETY DATA SHEET

## SECTION I: IDENTIFICATION OF PRODUCT

COMPANY: **Diversity Technologies Corp.** DATE: Jan. 3, 2006  
**8750 – 53<sup>rd</sup> Ave.** PHONE: 604-940-6050  
**Edmonton, AB T6E 5G2** FAX: 604-940-6080

PRODUCT NAME: **G-STOP**

PRODUCT USE: Drilling mud additive.  
CHEMICAL FAMILY: Polyacrylamide CAS#: Not available

## WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

WHMIS CLASSIFICATION: Not a controlled product under WHMIS  
WORKPLACE HAZARD: Treat as a nuisance dust.

## TRANSPORTATION OF DANGEROUS GOODS (TDG)

PROPER SHIPPING NAME: Not regulated under TDG  
TDG CLASSIFICATION: Not applicable  
UN NUMBER (PIN): Not applicable  
PACKING GROUP: Not applicable

## SECTION II: HAZARDOUS INGREDIENTS

<u>INGREDIENT</u>	<u>PERCENT</u>	<u>CAS NUMBER</u>	<u>LD<sub>50</sub> Oral-Rat</u>	<u>LC<sub>50</sub> Inhal-Rat</u>	<u>ACGIH-TLV</u>
Contains no WHMIS controlled ingredients.					

## SECTION III: HEALTH HAZARDS

ROUTE OF ENTRY:  ]EYE CONTACT  ]SKIN  ]INHALATION  ]INGESTION

EYE CONTACT: May cause slight irritation and/or redness.

SKIN CONTACT: May cause slight irritation some cases.

INGESTION: Low acute oral toxicity. May cause nausea and vomiting.

INHALATION: May cause irritation of the respiratory tract, including sneezing and coughing.

CARCINOGENICITY: No information available.

TERATOGENICITY: No information available.

REPRODUCTIVE TOXICITY: No information available.

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**Diversity Technologies Corp. is the parent company of  
Canamara-United Supply, Hollimex Products, The Drilling Depot and  
Westcoast Drilling Supplies**



**SECTION VII: REACTIVITY DATA**

STABILITY:	STABLE [XX]	UNSTABLE [ ]
INCOMPATIBILITY (CONDITIONS TO AVOID):	Avoid contact with strong oxidizers. Avoid wet, damp or humid conditions, extremes of temperature, and ignition sources.	
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of carbon and nitrogen, various hydrocarbons, and/or hydrogen cyanide upon combustion	
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR [XX]	MAY OCCUR [ ]

**SECTION VIII: PREVENTATIVE MEASURES****SPECIAL PROTECTION INFORMATION**

RESPIRATORY PROTECTION:	Use approved dust mask in absence of adequate ventilation. Use approved respirators with dust cartridges if TLV is exceeded.
VENTILATION:	Use in well-ventilated area, or use local exhaust ventilation, process enclosure or other engineering controls to maintain dust level below TLV.
PROTECTIVE GLOVES:	Use gloves, if needed, to avoid prolonged or repeated skin contact.
EYE PROTECTION:	Use safety glasses or goggles.
OTHER PROTECTIVE EQUIPMENT (Specify):	As necessary to prevent contact. Ensure eyewash station and emergency shower are available.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

Avoid prolonged or repeated breathing of dust and contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Cleanse skin thoroughly after contact, before breaks and meals and at end of work period. Product is readily removed from skin by washing thoroughly with soap and water. Store in a cool, dry location away from incompatibles. Store in original container.

**STEPS TO BE TAKEN IN CASE THE MATERIAL IS SPILLED OR RELEASED**

Use appropriate safety equipment. Avoid creating dust clouds. Remove ignition sources. Sweep up or vacuum dry material and flush spill area with water. Collect uncontaminated material for repackaging. Collect contaminated material in approved containers for disposal. This product or its solutions should not be allowed to enter waterways without treatment.

## WASTE DISPOSAL METHOD

Dispose in accordance with federal, provincial and local regulations. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal. It may be possible to dispose of spills of non-hazardous materials in a landfill; check with local operator.

## SECTION IX: PREPARATION

THE INFORMATION CONTAINED HEREIN IS GIVEN IN GOOD FAITH,  
BUT NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE.

DATE ISSUED:	January 3, 2006	BY:	Product safety committee
SUPERSEDES:	March 31, 2003	PHONE:	780-440-4923



# AMC K ION

## AMC

Chemwatch Hazard Alert Code: 2

Chemwatch: 4751-58

Version No: 4.1.1.1

Safety Data Sheet according to WHMIS 2015 requirements

Issue Date: 11/08/2017

Print Date: 10/23/2019

L.GHS.CAN.EN

## SECTION 1 IDENTIFICATION

### Product Identifier

Product name	AMC K ION
Synonyms	Not Available
Other means of identification	Not Available

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

Relevant identified uses	Use according to manufacturer's directions. Drilling fluid additive.
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### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	AMC
Address	1220 N. 2200 W. Suite# 600, Salt Lake City UT 84116 United States
Telephone	801-364-0233
Fax	801-364-0278
Website	www.amcmud.com
Email	amc@imdexlimited.com

### Emergency phone number

Association / Organisation	AMC	CHEMWATCH EMERGENCY RESPONSE
Emergency telephone numbers	Chemwatch - (1) 877 715 9305	+61 2 9186 1132
Other emergency telephone numbers	-	Not Available

## SECTION 2 HAZARD(S) IDENTIFICATION

### Classification of the substance or mixture

NFPA 704 diamond




Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

### CANADIAN WHMIS SYMBOLS



Classification	Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Specific target organ toxicity - repeated exposure Category 2
----------------	---

### Label elements

<b>Hazard pictogram(s)</b>	
----------------------------	---

<b>SIGNAL WORD</b>	<b>WARNING</b>
--------------------	----------------

**Hazard statement(s)**

<b>H315</b>	Causes skin irritation.
<b>H319</b>	Causes serious eye irritation.
<b>H335</b>	May cause respiratory irritation.
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure.

**Physical and Health hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) General**

<b>P101</b>	If medical advice is needed, have product container or label at hand.
<b>P102</b>	Keep out of reach of children.

**Precautionary statement(s) Prevention**

<b>P260</b>	Do not breathe mist/vapours/ spray.
<b>P271</b>	Use only outdoors or in a well-ventilated area.

**Precautionary statement(s) Response**

<b>P321</b>	Specific treatment (see advice on this label).
<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Precautionary statement(s) Storage**

<b>P405</b>	Store locked up.
<b>P403+P233</b>	Store in a well-ventilated place. Keep container tightly closed.

**Precautionary statement(s) Disposal**

<b>P501</b>	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
-------------	--

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

**Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
Not Available	30-60	a blend of clay inhibitive polymers
127-08-2	10-<30	<u>potassium acetate</u>
Not Available	balance	nonhazardous ingredients

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**SECTION 4 FIRST-AID MEASURES**

**Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
--------------------	---

<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Seek medical advice.</li> </ul>

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

For potassium intoxications:

- ▶ Hyperkalaemia, in patients with abnormal renal function, results from reduced renal excretion following intoxication.
- ▶ The presence of electrocardiographic evidence of hyperkalemia or serum potassium levels exceeding 7.5 mE/L indicates a medical emergency requiring an intravenous line and constant cardiac monitoring.
- ▶ The intravenous ingestion of 5-10 ml of 10% calcium gluconate, in adults, over a 2 minute period antagonises the cardiac and neuromuscular effects. The duration of action is approximately 1 hour. [Ellenhorn and Barceloux: Medical Toxicology]

## SECTION 5 FIRE-FIGHTING MEASURES

### Extinguishing media

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known
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### Special protective equipment and precautions for fire-fighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered to be a significant fire risk.</li> </ul> <p>Decomposes on heating and produces toxic fumes of: carbon dioxide (CO<sub>2</sub>) nitrogen oxides (NO<sub>x</sub>)</p>

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> </ul>
<b>Major Spills</b>	<p>Minor hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Limit all unnecessary personal contact.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> </ul>

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> </ul> 20 L pails.
<b>Storage incompatibility</b>	None known

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Not Available

#### EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
potassium acetate	Potassium acetate	9.8 mg/m <sup>3</sup>	110 mg/m <sup>3</sup>	640 mg/m <sup>3</sup>

Ingredient	Original IDLH	Revised IDLH
potassium acetate	Not Available	Not Available

#### OCCUPATIONAL EXPOSURE BANDING


Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
potassium acetate	E	≤ 0.01 mg/m <sup>3</sup>

#### Notes:

*Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.*

#### MATERIAL DATA

### Exposure controls

<b>Appropriate engineering controls</b>	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. <ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C.</li> </ul>

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Odourless liquid, mixes with water.		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	1.09
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available

<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	>100	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	3.1 @ 25C	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Miscible	<b>pH as a solution (1%)</b>	7.0-9.0
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	Product is considered stable and hazardous polymerisation will not occur.
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

<b>Inhaled</b>	Not normally a hazard due to non-volatile nature of product
<b>Ingestion</b>	Accidental ingestion of the material may be damaging to the health of the individual. Acute potassium poisonings following ingestion are rare because large doses usually induce vomiting and a healthy kidney ensures rapid excretion. Potassium poisoning disturbs the rhythm of the heart (a slow, weak pulse, heightened T waves on the ECG, arrhythmias heart block) and eventually produces a fall in blood pressure (due to weakened cardiac contractility).
<b>Skin Contact</b>	The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
<b>Eye</b>	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

<b>AMC K ION</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>potassium acetate</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: 3250 mg/kg <sup>[2]</sup>	Not Available

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. \* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

<b>POTASSIUM ACETATE</b>	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a
--------------------------	--

AMC K ION

	non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.		
Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✓
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification  
✓ – Data available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

AMC K ION	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available

potassium acetate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	>1-mg/L	2
	EC50	48	Crustacea	>919mg/L	2
	EC50	72	Algae or other aquatic plants	>1-mg/L	2
	NOEC	72	Algae or other aquatic plants	1-mg/L	2

**Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

**DO NOT** discharge into sewer or waterways.

May be harmful to fauna if not disposed of according to Section 13 and legislative requirements. [AMC]

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Authority for disposal.</li> </ul>
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SECTION 14 TRANSPORT INFORMATION

## Labels Required

Marine Pollutant	NO
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**Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

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

### POTASSIUM ACETATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Canada Categorization decisions for all DSL substances  
Canada Domestic Substances List (DSL)

Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS (English)

### National Inventory Status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	No (potassium acetate)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - ARIPS	Yes
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

## SECTION 16 OTHER INFORMATION

Revision Date	11/08/2017
Initial Date	Not Available

### SDS Version Summary

Version	Issue Date	Sections Updated
3.1.1.1	12/16/2015	Appearance
4.1.1.1	11/08/2017	Name

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

### Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit.

IDLH: Immediately Dangerous to Life or Health Concentrations

OSF: Odour Safety Factor

NOAEL :No Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value

LOD: Limit Of Detection

OTV: Odour Threshold Value

BCF: BioConcentration Factors

BEI: Biological Exposure Index

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## SECTION 1 - MATERIAL IDENTIFICATION AND USE

CAS #

Manufacturer's Name <b>BioCANlubricants</b> a div. of 2125278 Ontario Ltd.	Suppliers Name <b>BioCANlubricants</b> a div. of 2125278 Ontario Ltd.
Manufacturer's Street Address <b>100 Wilkinson Road, Unit 12</b>	Suppliers Address <b>100 Wilkinson Road, Unit 12</b>
Manufacturer's City <b>BRAMPTON</b>	Suppliers City <b>BRAMPTON</b>
Manufacturer's Province <b>ONTARIO</b>	Suppliers Province <b>ONTARIO</b>
Manufacturer's Postal Code <b>L6T 4Y9</b>	Suppliers Postal Code <b>L6T 4Y9</b>
Manufacturer's Emergency Telephone No. <b>905-453-7007</b>	Suppliers Emergency Telephone No. <b>416-884-1635</b>

## SECTION 11 - HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous Ingredients	Approximate % Concentration	C.A.S. N.A. or U.N. Numbers	LD50 Of Material Specify Species and Route	LC 50 Specify Species
<b>this is not a WHMIS controlled product</b>				

## SECTION 111 - PHYSICAL DATA FOR MATERIAL

Physical State Gas <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid <input type="checkbox"/>	Odour and Appearance <b>faint soap, brown coloured opaque paste</b>		Odour Threshold (ppm) <b>not applicable</b>	Specific Gravity <b>not applicable</b>
Vapour Pressure (mm) <b>not applicable</b>	Vapour Density (Air=1) <b>not applicable</b>	Evaporation Rate <b>not applicable</b>	Boiling Point (°C) <b>100'</b>	Pour Point(°C) <b>-0'</b>
Coefficient of water/oil distribution <b>not applicable</b>	% Volatile (by volume) <b>not applicable</b>	Solubility in Water (20°C) <b>100 %</b>	pH <b>9.5 to 11.5</b>	

## SECTION IV - FIRE AND EXPLOSION HAZARD OF MATERIAL

Flammability YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	If yes, under what conditions:		
Means of Extinction <b>Use extinguishing media appropriate for surrounding fire.</b>			
Special Procedures <b>not applicable</b>			
Flashpoint (°C) and method <b>not applicable</b>	Upper explosion limit (% by volume) <b>not applicable</b>	Lower explosion limit (% by volume) <b>not applicable</b>	
Auto Ignition Temperature(°C) <b>not applicable</b>	TDG Flammability Classification <b>not applicable</b>	Hazardous Combustion Products <b>not applicable</b>	
Explosion Data Sensitivity to Chemical Impact <b>not applicable</b>	Sensitivity to Static Discharge <b>not applicable</b>	Explosive Power <b>not applicable</b>	Rate of Burning <b>not applicable</b>

## SECTION V - REACTIVE DATA

Chemical Stability YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	If no, under which conditions?
---	--------------------------------

Incompatibility to other substances

If so, which ones?

YES  NO

Reactivity and under what conditions

**not applicable**

Hazardous Decomposition Products

**not applicable**

**SECTION VI - TOXICOLOGICAL PROPERTIES OF PRODUCT**

Route of Entry

Skin Contact  Skin Absorption  Eye Contact  Inhalation Acute  Inhalation Chronic  Ingestion

Effects of Acute Exposure to Product

**not applicable**

Effects to Chronic Exposure to Product

**not applicable**

LD 50 of Product (Specify Species and Route)

**not applicable**

Irritancy of Product

**not applicable**

Exposure limits of Product (ACGIH TLV)

**not applicable**

LC 50 of Product (Specify Species)

**not applicable**

Sensitization to Product

**not applicable**

Synergistic materials

**not applicable**

Carcinogenicity  Reproductive effects  Teratogenicity  Mutagenicity

**SECTION VII - PREVENTIVE MEASURES**

Personal Protective Equipment

**not applicable**

Gloves (Specify)

**not applicable**

Respirator (Specify)

**not applicable**

Eye (Specify)

**not applicable**

Footware (Specify)

**not applicable**

Clothing (Specify)

**not applicable**

Other (Specify)

**not applicable**

Engineering Controls (e.g. ventilation, enclosed process, specify)

**not applicable**

Leaks and Spill Procedure

**Spills are slippery and could cause skidding of personel and or equipment. Material can be used if not contaminated with foreign substances**

Waste Disposal

**Incineration or sanitary landfill in accordance with government regulations.**

Handling Procedure and Equipment

**not applicable**

Storage Requirements

**not applicable**

Special Shipping Information

**none**

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**SECTION V111 - FIRST AID MEASURES**

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Skin  
**Rinse with water.**

---

Eye  
**Rinse with water.**

---

Inhalation  
**not applicable**

---

Ingestion  
**Drink 2 glasses of water, induce vomiting.**

---

General advise  
**not applicable**

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**SECTION IX - PREPARATION OF M.S.D.S.**

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Additional Information / Comments  
**not applicable**

Sources Used

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Prepared by	<b>A.J. HOOD</b>	Phone number	905-453-7007	Date	<b>APRIL 9, 2010</b>
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# MATERIAL SAFETY DATA SHEET



102 – 17910 – 55<sup>th</sup> Ave., Surrey, BC, Canada V3S 6C8 • Toll Free 1-866-535-6699  
Tel: 604-575-6660 Fax: 604-575-5494 e-mail: extreme.ron@telus.net

**EXTREME NUMBER ONE**

**EMERGENCY PHONE NO. (604) 575-6660**

**PAGE 1 OF 5**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 1  
FIRE 0  
REACTIVITY 0  
OTHER: B (GLASSES & GLOVES)

### HAZARD RATING:

0 LEAST  
1 SLIGHT  
2 MODERATE  
3 HIGH  
4 EXTREME

## SECTION 1

## PRODUCT IDENTIFICATION

PRODUCT NAME: EXTREME NUMBER ONE  
CHEMICAL IDENTIFICATION: Acrylamide, Acrylate Copolymer  
MATERIAL USE: Drilling Fluid Additive  
WHMIS CLASSIFICATION: Not Regulated  
WORK PLACE HAZARD: Not Applicable

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: Not Dangerous Goods  
PACKAGE GROUP: Not Applicable  
CAS NUMBER: Not Applicable  
MSDS CODE: Not Applicable

## SECTION 2

## HAZARDOUS INGREDIENTS

INGREDIENT: None Considered Hazardous  
PERCENTAGE: Not Available  
CAS NUMBER: Not Available  
LD (50): Not Available  
LC (50): Not Available

EXTREME NUMBER ONE

**MATERIAL SAFETY DATA SHEET****SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	Slight, mild odour, white, granular solid
DENSITY (SPECIFIC GRAVITY):	.80
BOILING POINT:	Not Available
MELTING POINT:	Not Available
SOLUBILITY:	Soluble
EVAPORATION RATE: (EE=1):	Not Available
VAPOUR PRESSURE: (MM HG):	Not Available
VAPOUR DENSITY: (AIR = 1):	Not Available

**SECTION 4****FIRE AND EXPLOSION**

FLASHPOINT:	Not Applicable
FLAMMABLE LIMIT:	Not Available
AUTO IGNITION TEMP:	No Data
EXTINGUISHING MEDIA:	Dry Chemical, Carbon Dioxide, Foam
SPECIAL FIRE FIGHTING PROCEDURES:	Self-Contained Respirators For Fire Fighting Personnel.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Products of incomplete combustion and oxides of nitrogen and carbon.

**SECTION 5****REACTIVITY DATA**

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizing agents and highly alkaline solutions
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	None

---

**MATERIAL SAFETY DATA SHEET****EXTREME NUMBER ONE****SECTION 6****HEALTH HAZARDS**

## ROUTE OF ENTRY:

 SKIN EYE CONTACT INHALATION INGESTION

## SKIN CONTACT:

May be minimally irritating to sensitive skin upon prolonged direct contact.

## EYE CONTACT:

May be minimally irritating to eyes upon direct contact.

## INHALATION:

May cause irritation to nose and throat.

**SECTION 7****PREVENTATIVE MEASURES**

## SKIN PROTECTION:

Impervious gloves, protective clothing as required  
Goggles.

## EYE PROTECTION:

General mechanical; 10 changes per hour.

## VENTILATION:

Approved dust mask; MESA type

## RESPIRATORY PROTECTION:

Ventilate area, wear rubber boots, gloves and a self-contained respirator if ventilation inadequate.

## LEAK &amp; SPILL PROCEDURE:

Collect into waste container. wash site after pick up. Water solutions extremely slippery.

## WASTE DISPOSAL:

Dispose in compliance with government regulations and local requirements.

## STORAGE REQUIREMENTS:

Cool, dry area, away from oxidizing and reducing agents. Keep containers closed when not in use. Avoid prolonged contact when handling. Do not inhale dust.

**EXTREME NUMBER ONE**

**MATERIAL SAFETY DATA SHEET**

**SECTION 8**

**FIRST AID MEASURES**

SKIN:

Wash thoroughly with soap and warm water

EYE:

Flush with water for at least 15 minutes. Seek medical attention.

INHALATION:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.

INGESTION:

Do not induce vomiting. If conscious, dilute by giving two glasses of water. Seek medical attention.

**SECTION 9**

**PREPARATION DATE**

DATE ISSUED:

APRIL 18, 2009

DATE REVISED:

JANUARY 01, 2012

BY:

PRODUCT SAFETY COMMITTEE

THE DATA REPRESENTED HEREIN IS BELIEVED ACCURATE AND REFLECTS OUR BEST PROFESSIONAL JUDGMENT. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY USE, OR ANY OTHER WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF SUCH DATA, THE RESULTS TO BE OBTAINED FROM THE USE THEREOF, OR THAT ANY SUCH USE DOES NOT INFRINGE ANY PATENT. SINCE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS OF USE BEYOND OUR CONTROL AND WITH WHICH WE MAY BE UNFAMILIAR, WE DO NOT ASSUME ANY RESPONSIBILITY FOR THE RESULTS OF SUCH APPLICATION. THIS INFORMATION IS FURNISHED UPON THE CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS OWN DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR HIS PARTICULAR PURPOSE.

## MATERIAL SAFETY DATA SHEET

EXTREME NUMBER ONE

## ADDENDUM

SECTION 10ECOLOGICAL INFORMATION

## ACUTE TOXICITY:

- Oral: LD50/oral/rat > 5000 mg/kg
- Dermal: The results of lab testing showed this material to be non-toxic even at high dose levels.
- Inhalation: The product is not expected to be toxic by inhalation.

## IRRITATION:

- Skin: The results of lab testing showed this material to be non-irritating to the skin.
- Eyes: Testing conducted according to the Draize technique showed the material produces no corneal or iridial effects and only slight transitory conjunctival effects similar to those which all granular materials have no conjunctivae.

## SENSITIZATION:

The results of lab testing showed this material to be non-sensitizing.

## CHRONIC TOXICITY:

The results of extensive lab testing did not reveal adverse health effects.

ECOTOXICITY

- Fish: LC50 / Fathead minnows / 96 hours > 1000 mg/l
- Algae: EC50 / Selenastrum capricornutum > 96 hours > 500 mg/l

## Bioaccumulation:

The product is not expected to bioaccumulate.

## Persistence / degradability:

Not readily biodegradable.

**MATERIAL SAFETY DATA SHEET**  
Current MSDS may always be viewed at [www.lehighhansoncanada.com](http://www.lehighhansoncanada.com)

**SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** Portland Cement, GU (General use hydraulic cement), HE (High early-strength hydraulic cement) and HS (High sulphate-resistant hydraulic cement).

**CAS #:** 65997-15-1

**Product Use:** Preparation of concrete and mortar.

**MSDS Information:** This MSDS was produced in November of 2014 and replaces any previous versions. This MSDS covers all types of Portland cement. Individual composition of constituents will vary within the range shown in Section 2.

**Product Code:** Not Applicable.

**Chemical Family:** Calcium compounds. Calcium silicate compounds and other calcium compounds containing iron and aluminum and silicon make up the majority of this product.

**Chemical Name And Synonyms:** Portland cement. Portland cement is also known as hydraulic cement and/or normal Portland cement.

**Formula:** This product consists of finely ground portland cement clinker, gypsum and limestone (for some products).

**Supplier/Manufacturer:** Lehigh Cement  
12640 Inland Way  
Edmonton, Alberta, Canada, T5V 1K2 Telephone 780 420 2500

**Emergency Contact Information:** Lehigh Cement  
12640 Inland Way  
Edmonton, Alberta, Canada, T5V 1K2 Telephone 780 420 2541

**SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Portland Cement Clinker/Fly Ash Exposure Limits:</b>	ACGIH TLV-TWA	10 mg total dust/m <sup>3</sup>
	OSHA PEL-TWA	15 mg total dust/m <sup>3</sup>
	OSHA PEL-TWA	5 mg respirable dust/m <sup>3</sup>

**Portland Cement Clinker/Fly Ash Ingredients & Their Exposure Limits:**

Ingredient	CAS#	% By Weight	ACGIH TLV-TWA	OSHA PEL-TWA
Calcium Silicates	various	60-80%	10 mg total dust/m <sup>3</sup>	15 mg total dust/m <sup>3</sup> 5 mg respirable dust/m <sup>3</sup>
Gypsum	7778-18-9	3-7%	10 mg total dust/m <sup>3</sup>	15 mg total dust/m <sup>3</sup> 5 mg respirable dust/m <sup>3</sup>
Crystalline Silica	14808-60-7	>0.1%	0.10 mg respirable quartz/m <sup>3</sup> NIOSH REL (8-hour TWA) = 0.05 mg respirable quartz dust/m <sup>3</sup>	(10 mg respirable dust/m <sup>3</sup> )/(percent silica+2)
Calcium Carbonate	1317-65-3	0-5%	10 mg total dust/m <sup>3</sup>	15 mg total dust/m <sup>3</sup> 5 mg respirable dust/m <sup>3</sup>
Magnesium Oxide	1309-48-4	1-4%	10 mg total dust/m <sup>3</sup>	10 mg total dust/m <sup>3</sup>
Calcium Oxide	1305-78-8	0.5-1.5%	2 mg total dust/m <sup>3</sup>	5 mg total dust/m <sup>3</sup>

**Trace Elements:**

Portland cement is made from materials mined from the earth and is processed using energy provided by fuels. Trace amounts of chemicals, some of which may be potentially harmful, might be detected during chemical analysis. For example, in addition to the ingredients listed above, portland cement may contain potassium and sodium sulfate compounds, chromium compounds (including up to 0.003% hexavalent chromium) and nickel compounds.

## MATERIAL SAFETY DATA SHEET

Current MSDS may always be viewed at [www.lehighhansoncanada.com](http://www.lehighhansoncanada.com)

### SECTION 3 - HAZARDS IDENTIFICATION

#### Emergency Overview:

Portland cement is a light gray powder that poses little immediate hazard. A single short term exposure to the dry powder is not likely to cause serious harm. However, exposure of sufficient duration to wet portland cement can cause serious, potentially irreversible tissue (skin or eye) destruction in the form of chemical (caustic) burns, including third degree burns. The same type of tissue destruction can occur if wet or moist areas of the body are exposed for sufficient duration to dry portland cement.

#### Potential Health Effects:

- **Relevant routes of exposure are:**

Eye contact, skin contact, inhalation, and ingestion.

##### **Effects Resulting From EYE CONTACT:**

Exposure to airborne dust may cause immediate or delayed irritation or inflammation.

Eye contact by larger amounts of dry powder or splashes of wet portland cement may cause effects ranging from moderate eye irritation to chemical burns and blindness. Such exposures require immediate first aid (see Section 4) and medical attention to prevent significant damage to the eye.

##### **Effects Resulting From SKIN CONTACT:**

Discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure. Consequently, the only effective means of avoiding skin injury or illness involves minimizing skin contact, particularly contact with wet cement. Exposed persons may not feel discomfort until hours after the exposure has ended and significant injury has occurred.

Exposure to dry portland cement may cause drying of the skin with consequent mild irritation or more significant effects attributable to aggravation of other conditions. Dry portland cement contacting wet skin or exposure to moist or wet portland cement may cause more severe skin effects including thickening, cracking, or fissuring of the skin. Prolonged exposure can cause severe skin damage in the form of (caustic) chemical burns.

Some individuals may exhibit an allergic response upon exposure to portland cement, possibly due to trace amounts of chromium. The response may appear in a variety of forms ranging from a mild rash to severe skin ulcers. Persons already sensitized may react to their first contact with the product. Other persons may first experience this effect after years of contact with portland cement products.

##### **Effects Resulting From INHALATION:**

Portland cement contains crystalline silica. Prolonged exposure to respirable free crystalline silica may aggravate other lung conditions. It also may cause delayed lung injury including silicosis, a disabling and potentially fatal lung disease, and/or other diseases. (Also see "Carcinogenic Potential" below.)

Exposure to portland cement may cause irritation to the moist mucous membranes of the nose, throat, and upper respiratory system. It may also leave unpleasant deposits in the nose.

##### **Effects Resulting From INGESTION:**

Although small quantities of dust are not known to be harmful, ill effects are possible if larger quantities are consumed. Portland cement should not be eaten.

- **Carcinogenic Potential:**

Portland cement is not listed as a carcinogen by NTP, OSHA, or IARC. It may, however, contain trace amounts of substances listed as carcinogens by these organizations.

Crystalline silica, a potential trace level contaminant in portland cement, is now classified by IARC as a known human carcinogen (Group 1). NTP has characterized respirable silica as "reasonably anticipated to be [a] carcinogen".

- **Medical Conditions That May Be Aggravated By Inhalation Or Dermal Exposure:**

Pre-existing upper respiratory and lung diseases.  
Unusual (hyper) sensitivity to hexavalent chromium (chromium<sup>+6</sup>) salts.

## MATERIAL SAFETY DATA SHEET

Current MSDS may always be viewed at [www.lehighhansoncanada.com](http://www.lehighhansoncanada.com)

### SECTION 4 - FIRST-AID MEASURES

**Eyes:**

Immediately flush eyes thoroughly with water. Continue flushing for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

**Skin:**

Wash skin with cool water and pH-neutral soap or a mild detergent intended for use on skin. Seek medical treatment in all cases of prolonged exposure to wet cement, cement mixtures, liquids from fresh cement products, or prolonged wet skin exposure to dry cement.

**Inhalation Of Airborne Dust:**

Remove to fresh air. Seek medical help if coughing and other symptoms do not subside. ("Inhalation" of gross amounts of portland cement requires immediate medical attention.)

**Ingestion:**

Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

### SECTION 5 - FIRE-FIGHTING MEASURES

<b>Flammability:</b>	Not Flammable.
<b>Flash Point:</b>	Not Applicable.
<b>Lower Explosive Limit:</b>	Not Applicable.
<b>Upper Explosive Limit:</b>	Not Applicable.
<b>Auto ignition Temperature:</b>	Not Applicable.
<b>Sensitivity To Static Discharge:</b>	Not Applicable.
<b>Sensitivity To Impact:</b>	Not Applicable.
<b>Extinguishing Media:</b>	Not Applicable.
<b>Special Fire-Fighting Procedures:</b>	None.
<b>Hazardous Combustion Products:</b>	Not Applicable.
<b>Unusual Fire And Explosion Hazards:</b>	Not Applicable.

### SECTION 6 - ACCIDENTAL RELEASE MEASURES

Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate personal protective equipment as described in Section 8.

Scrape up wet material and place in an appropriate container. Allow the material to "dry" before disposal. Do not attempt to wash portland cement down drains.

Dispose of waste material according to local, provincial, state and federal regulations.

### SECTION 7 - HANDLING AND STORAGE

Keep portland cement dry until used. Normal temperatures and pressures do not affect the material.

Promptly remove dusty clothing or clothing which is wet with cement fluids and launder before reuse. Wash thoroughly after exposure to dust or wet cement mixtures or fluids.

**MATERIAL SAFETY DATA SHEET**  
Current MSDS may always be viewed at [www.lehighhansoncanada.com](http://www.lehighhansoncanada.com)

**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Eye Protection:**

When engaged in activities where cement dust or wet cement or concrete could contact the eye, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with portland cement or fresh cement products.

**Skin Protection:**

Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened (wet) portland cement products. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to unhardened portland cement products might occur, wear impervious clothing and gloves to eliminate skin contact. Where required, wear boots that are impervious to water to eliminate foot and ankle exposure.

Do not rely on barrier creams; barrier creams should not be used in place of gloves.

Periodically wash areas contacted by dry Portland cement or by wet cement or concrete fluids with a pH-neutral soap. Wash again at the end of work. If irritation occurs, immediately wash the affected area and seek treatment. If clothing becomes saturated with wet concrete, it should be removed and replaced with clean dry clothing.

**Respiratory Protection:**

Avoid actions that cause dust to become airborne. Use local or general ventilation to control exposures below applicable exposure limits.

Use NIOSH/MSHA-approved (under 30 CFR 11) or NIOSH-approved (under 42 CFR 84 after July 10, 1998) respirators in poorly ventilated areas, if an applicable exposure limit is exceeded, or when dust causes discomfort or irritation.

**Ventilation:**

Use local exhaust or general dilution ventilation to control exposure within applicable limits.

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	White to gray powder.
<b>Odor:</b>	No distinct odor.
<b>Odor Threshold:</b>	Not applicable.
<b>Physical State:</b>	Solid (powder).
<b>pH (as a solid):</b>	Not applicable.
<b>pH (in water) (ASTM D 1293-95):</b>	12 to 13
<b>Solubility In Water:</b>	Slightly soluble (0.1 to 1.0 %).
<b>Vapor Pressure:</b>	Not applicable.
<b>Vapor Density:</b>	Not applicable.
<b>Boiling Point:</b>	Not applicable (i.e., >1000°C).
<b>Freezing Point:</b>	Not applicable.
<b>Melting Point:</b>	Not applicable.
<b>Specific Gravity (H<sub>2</sub>O = 1.0):</b>	3.15
<b>Evaporation Rate:</b>	Not applicable.
<b>Coeff. Water/Oil Dist.:</b>	Not applicable.

**SECTION 10 - STABILITY AND REACTIVITY**

<b>Stability:</b>	Stable
<b>Conditions to avoid:</b>	Unintentional contact with water.
<b>Incompatibility:</b>	Portland cement reacts with water to produce a caustic solution, pH 12 to pH 13. Wet portland cement is alkaline. As such it is incompatible with acids, ammonium salts and aluminum metal. Aluminum powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas. Portland cement dissolves in hydrofluoric acid producing corrosive silicon tetrafluoride gas. Silicates react with powerful oxidizers such as fluorine, chlorine, trifluoride and oxygen difluoride.

## MATERIAL SAFETY DATA SHEET

Current MSDS may always be viewed at [www.lehighhansoncanada.com](http://www.lehighhansoncanada.com)

### SECTION 10 - STABILITY AND REACTIVITY (CONTINUED)

**Hazardous Decomposition:** Will not spontaneously occur. Adding water results in hydration and produces (caustic) calcium hydroxide.

**Hazardous Polymerization:** Will not occur.

### SECTION 11 - TOXICOLOGICAL INFORMATION

**Effects Of Acute Exposure:**

Portland cement and wet portland cement mixtures can dry the skin, cause alkali burns and irritate the eyes and upper respiratory tract. Ingestion can cause irritation of the throat.

**Effects Of Chronic Exposure:**

Portland cement dust can cause inflammation of the tissue lining the interior of the nose and the cornea (white) of the eye.

### SECTION 12 - ECOLOGICAL INFORMATION

**Ecotoxicity:** No recognized unusual toxicity to plants or animals.  
**Relevant Physical and Chemical Properties:** See Sections 9 and 10.

### SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose of waste material according to local, provincial, state and federal regulations. (Since portland cement is stable, uncontaminated material may be saved for future use.)

Dispose of bags in an approved landfill or incinerator.

### SECTION 14 - TRANSPORT INFORMATION

**Hazardous materials description/proper shipping name:** Portland cement is not hazardous under the TDG Act DOT regulations (Canada) or (USA).  
**Hazard Class:** Not applicable.  
**Identification Number:** Not applicable.  
**Required Label Text:** Not applicable.  
**Hazardous substances/reportable quantities (RO):** Not applicable.

### SECTION 15 - REGULATORY INFORMATION

**Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200:**

Portland cement is considered a "hazardous chemical" under this regulation, and should be part of any hazard communication program.

**Status under CERCLA/Superfund, 40 CFR 117 and 302:**

Not listed.

**Hazard Category under SARA (Title III), Sections 311 and 312:**

Portland cement qualifies as a "hazardous substance" with delayed health effects.

**Status under SARA (Title III), Section 313:**

Not subject to reporting requirements under Section 313.

## MATERIAL SAFETY DATA SHEET

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### SECTION 15 - REGULATORY INFORMATION (CONTINUED)

**Status under SARA (Title III), Section 313:**

Not subject to reporting requirements under Section 313.

**Status under TSCA (as of May 1997):**

Some substances in portland cement are on the TSCA inventory list.

**Status under the Federal Hazardous Substances Act:**

Portland cement is a "hazardous substance" subject to statutes promulgated under the subject act.

**Status under California Proposition 65:**

This product contains chemicals (trace metals) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the manufacturer to give the above warning in the absence of definitive testing to prove the defined risks do not exist.

**Status under Canadian Environmental Protection Act:**

Not listed.

**Status under WHMIS:**

Portland cement is considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations and is therefore subject to the labeling and MSDS requirements of the Workplace Hazardous Materials Information System (WHMIS).

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

### SECTION 16 - OTHER INFORMATION

**Prepared By:** Jeffrey Matchett

**Approved By:** Christian Knoch

**Approval Date or Revision Date:** November 13, 2014

**Date of Previous MSDS:** October 1, 2011

**MSDS Number:** N/A

**Other Important Information:**

Portland cement should only be used by knowledgeable persons. A key to using the product safely requires the user to recognize that portland cement chemically reacts with water, and that some of the intermediate products of this reaction (that is, those present while a portland cement product is "setting") pose a far more severe hazard than does portland cement itself.

While the information provided in this material safety data sheet is believed to provide a useful summary of the hazards of portland cement as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product.

In particular, the data furnished in this sheet does not address hazards that may be posed by other materials mixed with portland cement to produce portland cement products. Users should review other relevant material safety data sheets before working with this portland cement or working on portland cement products, for example, portland cement concrete.

No representations or warranties with respect to the accuracy or correctness of this information, or of any kind or nature whatsoever are given, made or intended by Lehigh Cement. No legal responsibility whatsoever is assumed for this information, or for any injuries or damages, however caused which may result from the use of this information. This information is offered solely for informational purposes and is subject to your own independent investigation and verification.

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## EXTREME ROD GREASE

**EMERGENCY PHONE NO. (604) 575-6660**

**PAGE 1 OF 4**

### WHMIS HAZARD INDEX:

#### DEGREE OF HAZARD:

HEALTH 0  
FIRE 1  
REACTIVITY 0  
OTHER: A (GLASSES & GLOVES)

#### HAZARD RATING:

0 LEAST  
1 SLIGHT  
2 MODERATE  
3 HIGH  
4 EXTREME

### SECTION 1

### PRODUCT IDENTIFICATION

PRODUCT NAME: EXTREME ROD GREASE  
CHEMICAL IDENTIFICATION: Petroleum Hydrocarbon  
MATERIAL USE: Thick composition, industrial lubricant  
WHMIS CLASSIFICATION: Not controlled  
WORK PLACE HAZARD: Not applicable

### TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: Not dangerous goods  
PACKAGE GROUP: Not applicable  
CAS NUMBER: Not applicable  
MSDS CODE: Not applicable

### SECTION 2

### HAZARDOUS INGREDIENTS

INGREDIENT: Mixture of hydrotreated neutral base oil and additives  
PERCENTAGE: 100%  
CAS NUMBER: Not applicable  
LD (50): Acute oral toxicity (Rat): 5000 Mg/Kg  
LC (50): Not determined  
TLV-TWA: 5 Mg/m<sup>3</sup> (Oil Mist)

## EXTREME ROD GREASE

**MATERIAL SAFETY DATA SHEET****SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	Long fibered grease, greenish brown colour, mild grease like odour.
DENSITY (SPECIFIC GRAVITY):	.89
BOILING POINT:	260°C
MELTING POINT:	Not available
SOLUBILITY:	Insoluble in cold water, soluble in non-polar hydrocarbon solvents.
EVAPORATION RATE: (EE=1):	Not available
VAPOUR PRESSURE: (MM HG):	0.0075 @ 20°C
VAPOUR DENSITY: (AIR = 1):	Not available

**SECTION 4****FIRE AND EXPLOSION**

FLASHPOINT:	252°C
FLAMMABLE LIMIT:	Not available
AUTO IGNITION TEMP:	316°C
EXTINGUISHING MEDIA:	Dry chemical, foam, CO <sub>2</sub> , water spray, fog
SPECIAL FIRE FIGHTING PROCEDURES:	None required
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None

**SECTION 5****REACTIVITY DATA**

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	Avoid excessive heat, highly reactive with oxidizing agents.
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of carbon and nitrogen, irritating fumes and smoke as products of incomplete combustion.

## EXTREME ROD GREASE

## MATERIAL SAFETY DATA SHEET

**SECTION 6****HEALTH HAZARDS**

## ROUTE OF ENTRY:

 SKIN EYE CONTACT INHALATION INGESTION

## SKIN CONTACT:

## EYE CONTACT:

## INHALATION:

## INGESTION:

Non-irritating; for prolonged exposure wear gloves.  
May irritate the eyes  
Low vapour pressure, not expected to present inhalation exposure under normal conditions.  
Low toxicity on ingestion; has laxative effect and rapidly eliminated.

**SECTION 7****PREVENTATIVE MEASURES**

## SKIN PROTECTION:

## EYE PROTECTION:

## VENTILATION:

## RESPIRATORY PROTECTION:

## LEAK &amp; SPILL PROCEDURE:

## WASTE DISPOSAL:

## STORAGE REQUIREMENTS:

None normally required. Personal preference suggest gloves, boots and long sleeved clothing.  
Wear safety glasses/goggles.  
No special ventilation required for normal conditions.  
None normally required. If mist generated by heating or spraying wear an organic vapour respirator with mist filter.  
Contain spill. Use appropriate tools to place spilled material in a container for reclaiming or disposal.  
Dispose of in compliance with local and government regulations.  
Store in cool, dry area away from oxidizing agents.  
Keep containers tightly closed when not in use.

## EXTREME ROD GREASE

**MATERIAL SAFETY DATA SHEET****SECTION 8****FIRST AID MEASURES**

SKIN:	Wash gently and thoroughly with mild soap and water. Remove and launder contaminated clothes.
EYE:	Immediately flush eyes with running water for at least 15 minutes. Keep eyelids open. Do not use an eye ointment. Seek medical attention if irritation persists.
INHALATION:	Not expected under normal conditions. Remove victim to safe area, perform mouth to mouth resuscitation if victim is not breathing. Seek medical attention.
INGESTION:	Do not induce vomiting. Has laxative effect; rapidly eliminated. Medical assessment advised.

**SECTION 9****PREPARATION DATE**

DATE ISSUED:	AUGUST 20, 2009
DATE REVISED:	JANUARY 01, 2012
BY:	PRODUCT SAFETY COMMITTEE

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**EXTREME STOP**

**EMERGENCY PHONE NO. (604) 575-6660**

**PAGE 1 OF 4**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 0  
FIRE 0  
REACTIVITY 0  
OTHER: 0

### HAZARD RATING:

0 LEAST  
1 SLIGHT  
2 MODERATE  
3 HIGH  
4 EXTREME

## SECTION 1

## PRODUCT IDENTIFICATION

PRODUCT NAME: EXTREME STOP  
CHEMICAL IDENTIFICATION: Acrylamide Copolymer  
MATERIAL USE: Lost Circulation Material  
WHMIS CLASSIFICATION: Non Hazardous  
WORK PLACE HAZARD: Not Applicable

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: Not Dangerous Goods  
PACKAGE GROUP: N/A  
CAS NUMBER: N/A  
MSDS CODE: N/A

## SECTION 2

## HAZARDOUS INGREDIENTS

INGREDIENT: None Considered Hazardous  
PERCENTAGE: N/A  
CAS NUMBER: N/A  
LD (50):  
LC (50):

EXTREME STOP

**MATERIAL SAFETY DATA SHEET****SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	White Freeflowing Granules, very mild odour.
DENSITY (SPECIFIC GRAVITY):	1.05
BOILING POINT:	N/A
MELTING POINT:	N/A
SOLUBILITY:	>60%
EVAPORATION RATE: (EE=1):	N/A
VAPOUR PRESSURE: (MM HG):	N/A
VAPOUR DENSITY: (AIR = 1):	N/A

**SECTION 4****FIRE AND EXPLOSION**

FLASHPOINT:	No Data
FLAMMABLE LIMIT:	Not Determined
AUTO IGNITION TEMP:	No Data
EXTINGUISHING MEDIA:	Dry chemical, foam, water fog, CO <sub>2</sub>
SPECIAL FIRE FIGHTING PROCEDURES:	None
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None

**SECTION 5****REACTIVITY DATA**

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	Oxidizing Agents
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of Carbon as products of combustion.

EXTREME STOP

**MATERIAL SAFETY DATA SHEET****SECTION 6****HEALTH HAZARDS**

ROUTE OF ENTRY:

SKIN                       EYE CONTACT                       INHALATION                       INGESTION

SKIN CONTACT:

N/A

EYE CONTACT:

N/A

INHALATION:

N/A

INGESTION:

N/A

**SECTION 7****PREVENTATIVE MEASURES**

SKIN PROTECTION:

No special requirements.

EYE PROTECTION:

Goggles, may be nuisance dust.

VENTILATION:

No special requirements.

RESPIRATORY PROTECTION:

If nuisance dust use dust mask.

LEAK &amp; SPILL PROCEDURE:

Collect in container. Dispose with solid waste. Non hazardous.

WASTE DISPOSAL:

Dispose of in compliance with local and government regulations.

STORAGE REQUIREMENTS:

Store in a cool, dry area, away from oxidizing agents. Keep containers closed when not in use.

**EXTREME STOP****MATERIAL SAFETY DATA SHEET****SECTION 8****FIRST AID MEASURES**

SKIN:	N/A
EYE:	N/A
INHALATION:	N/A
INGESTION:	N/A

**SECTION 9****PREPARATION DATE**

DATE ISSUED:	AUGUST 20, 1996
DATE REVISED:	JANUARY 01, 2012
BY:	PRODUCT SAFETY COMMITTEE

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**EXTREME SUPER-G BLUE**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 1  
FIRE 2  
REACTIVITY 0  
OTHER: B (GLASSES & GLOVES)

### HAZARD RATING:

0 LEAST  
1 SLIGHT  
2 MODERATE  
3 HIGH  
4 EXTREME

## SECTION 1

## PRODUCT IDENTIFICATION

PRODUCT NAME: EXTREME SUPER-G BLUE  
CHEMICAL IDENTIFICATION: Anionic polyacrylamides in water oil emulsion  
MATERIAL USE: Drilling mud additive  
WHMIS CLASSIFICATION: B3, D2B  
WORK PLACE HAZARD: Combustible liquid; skin & eye irritant

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: Not dangerous goods  
PACKAGE GROUP: NA  
CAS NUMBER: NA  
MSDS CODE: NA

## SECTION 2

## HAZARDOUS INGREDIENTS

INGREDIENT:	<u>Mineral spirits</u>	<u>Alkyl Phenol Ethoxylate</u>	<u>Ethoxylated C12-15 Alcohol</u>
PERCENTAGE:	30-60	3-7	0.5-1.5
CAS NUMBER:	64742-47-8	68412-54-4	68131-39-5
LD (50):	>5 g/kg	3 g/kg	>3200 mg/kg
LC (50):	Undetermined	Undetermined	Undetermined

## EXTREME SUPER-G BLUE

**MATERIAL SAFETY DATA SHEET****SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	Blue liquid emulsion, slight odour
DENSITY (SPECIFIC GRAVITY):	NA
BOILING POINT:	NA
MELTING POINT:	NA
SOLUBILITY:	Forms gel
EVAPORATION RATE: (EE=1):	NA
VAPOUR PRESSURE: (MM HG):	NA
VAPOUR DENSITY: (AIR = 1):	NA

**SECTION 4****FIRE AND EXPLOSION**

FLASHPOINT:	65°C (TCC)
FLAMMABLE LIMIT:	Undetermined
AUTO IGNITION TEMP:	Undetermined
EXTINGUISHING MEDIA:	Water spray, foam, dry chemical & CO <sub>2</sub>
SPECIAL FIRE FIGHTING PROCEDURES:	Self-contained respirators required for firefighting personnel
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Water may cause slipperiness. Sensitivity to static discharge

**SECTION 5****REACTIVITY DATA**

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizing agents, strong reducing agents
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	NO <sub>x</sub> , CO <sub>x</sub>

## EXTREME SUPER-G BLUE

**MATERIAL SAFETY DATA SHEET****SECTION 6****HEALTH HAZARDS**

## ROUTE OF ENTRY:

(XX) SKIN                      (XX) EYE CONTACT                      ( ) INHALATION                      (XX) INGESTION

## SKIN CONTACT:

Irritant. Can cause redness, inflammation and irritation on prolonged contact

## EYE CONTACT:

Severe irritant. Can cause redness, tissue destruction and irritation

## INHALATION:

Unlikely

## INGESTION:

May cause nausea, diarrhea and abdominal cramps

**SECTION 7****PREVENTATIVE MEASURES**

## SKIN PROTECTION:

Chemically resistant gloves

## EYE PROTECTION:

Safety glasses

## VENTILATION:

General mechanical

## RESPIRATORY PROTECTION:

NIOSH approved organic vapour cartridge respirator if exposure is excessive

## LEAK &amp; SPILL PROCEDURE:

Small spills: soak up with absorbent material  
Large spills: dike to contain spill to prevent water pollution. Recover diked material

## WASTE DISPOSAL:

Incinerate/dispose of in accordance with local regulations

## STORAGE REQUIREMENTS:

Store in a cool, well-ventilated area

## EXTREME SUPER-G BLUE

**MATERIAL SAFETY DATA SHEET****SECTION 8****FIRST AID MEASURES**

SKIN:	Wash exposed area with soap & water. If irritation or abnormalities persist seek medical attention. Remove contaminated clothing and launder prior to re-use
EYE:	Immediately flush eyes with water for 15 mins and seek medical attention
INHALATION:	Remove to fresh air. If irritation continues, seek medical attention
INGESTION:	If conscious & alert, give 1-2 glasses water. Never give anything by mouth to an unconscious person. Seek medical attention; do not leave unconscious person unattended. Do not induce vomiting

**SECTION 9****PREPARATION DATE**

DATE ISSUED:	AUGUST 20, 1996
DATE REVISED:	JANUARY 01, 2012
BY:	PRODUCT SAFETY COMMITTEE

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PAGE 1 OF 4

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**EXTREME SUPER-G GOLD**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 1  
FIRE 0  
REACTIVITY 0  
OTHER: B (GLASSES & GLOVES)

### HAZARD RATING:

0 LEAST  
1 SLIGHT  
2 MODERATE  
3 HIGH  
4 EXTREME

## SECTION 1

## PRODUCT IDENTIFICATION

PRODUCT NAME: EXTREME SUPER-G GOLD  
CHEMICAL IDENTIFICATION: Polysaccharide suspension  
MATERIAL USE: Drilling mud additive  
WHMIS CLASSIFICATION: D2B  
WORK PLACE HAZARD: Skin & eye irritant

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: Not dangerous goods  
PACKAGE GROUP: NA  
CAS NUMBER: NA  
MSDS CODE: NA

## SECTION 2

## HAZARDOUS INGREDIENTS

INGREDIENT: Ethoxylated nonyl phenol  
PERCENTAGE: 1-5  
CAS NUMBER: 9016-45-9  
LD (50): 5100mg/kg  
LC (50):

## EXTREME SUPER-G GOLD

**MATERIAL SAFETY DATA SHEET****SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	Opaque dark yellow to beige liquid – little odour
DENSITY (SPECIFIC GRAVITY):	1.078
BOILING POINT:	Undetermined
MELTING POINT:	Undetermined
SOLUBILITY:	Dispersible
EVAPORATION RATE: (EE=1):	Undetermined
VAPOUR PRESSURE: (MM HG):	Undetermined
VAPOUR DENSITY: (AIR = 1):	Undetermined

**SECTION 4****FIRE AND EXPLOSION**

FLASHPOINT:	Not flammable
FLAMMABLE LIMIT:	Undetermined
AUTO IGNITION TEMP:	NA
EXTINGUISHING MEDIA:	CO <sub>2</sub> ; Foam; Dry Chemical; Water Spray
SPECIAL FIRE FIGHTING PROCEDURES:	NA
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Forms slippery mixture with water

**SECTION 5****REACTIVITY DATA**

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong Oxidizers & acids
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	CO <sub>2</sub> , smoke on combustion

## EXTREME SUPER-G GOLD

**MATERIAL SAFETY DATA SHEET****SECTION 6****HEALTH HAZARDS**

## ROUTE OF ENTRY:

(XX) SKIN                      (XX) EYE CONTACT                      ( ) INHALATION                      (XX) INGESTION

## SKIN CONTACT:

Irritant. Can cause redness &amp; irritation

## EYE CONTACT:

Severe irritant. Can cause redness &amp; irritation

## INHALATION:

Unlikely. May cause upper respiratory tract irritation

## INGESTION:

May cause nausea, diarrhea and/ or abdominal cramps

**SECTION 7****PREVENTATIVE MEASURES**

## SKIN PROTECTION:

Chemically resistant gloves

## EYE PROTECTION:

Safety glasses

## VENTILATION:

General mechanical

## RESPIRATORY PROTECTION:

NIOSH approved organic respirator if ventilation inadequate

## LEAK &amp; SPILL PROCEDURE:

Small spills: soak up with absorbent material  
Large spills: dike to contain spill to prevent water pollution. Water will cause extreme slipperiness

## WASTE DISPOSAL:

Incinerate/dispose of in accordance with local disposal regulations

## STORAGE REQUIREMENTS:

Store in a cool, well-ventilated area

## EXTREME SUPER-G GOLD

**MATERIAL SAFETY DATA SHEET****SECTION 8****FIRST AID MEASURES**

SKIN:	Immediately wash with soap & water for 5 mins. Seek medical help if irritation develops/persists
EYE:	Hold eyelids open & flush with a steady stream of water for 15 mins. Seek medical attention
INHALATION:	Unlikely. If respiratory irritation occurs, move to fresh air. If symptoms continue, seek medical help
INGESTION:	If conscious & alert, give 2 glasses water. Never give unconscious person anything by mouth. Seek medical help; do not leave unconscious person unattended. Do not induce vomiting

**SECTION 9****PREPARATION DATE**

DATE ISSUED:	AUGUST 20, 1996
DATE REVISED:	JANUARY 01, 2012
BY:	PRODUCT SAFETY COMMITTEE

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# MATERIAL SAFETY DATA SHEET

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT

**Product Name:** Z-50 PIPE DOPE  
**Product Description:** Base Oil and Additives  
**MSDS Number:** 8503  
**Product Code:** 2015A020X010  
**Intended Use:** Sealant

### COMPANY IDENTIFICATION

**Supplier:** Imperial Oil Products Division  
240 4th Avenue  
Calgary, ALBERTA. T2P 3M9 Canada  
**24 Hour Environmental / Health Emergency** 1-866-232-9563  
**Telephone**  
**Transportation Emergency Phone Number** 1-866-232-9563  
**Product Technical Information** 1-800-268-3183  
**Supplier General Contact** 1-800-567-3776

## SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

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

## SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines see Section 15.

### HEALTH EFFECTS

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

<b>NFPA Hazard ID:</b>	Health: 1	Flammability: 1	Reactivity: 1
<b>HMIS Hazard ID:</b>	Health: 1	Flammability: 1	Reactivity: 1

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

## SECTION 4 FIRST AID MEASURES

### INHALATION

Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

### SKIN CONTACT

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

### EYE CONTACT

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

### INGESTION

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

## SECTION 5 FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight streams of water

### FIRE FIGHTING

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

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

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** >221°C (430°F) [ASTM D-92]

**Flammable Limits (Approximate volume % in air):** LEL: 0.9 UEL: 7.0

**Autoignition Temperature:** >260°C (500°F)

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### NOTIFICATION PROCEDURES

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

### PROTECTIVE MEASURES

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

**SPILL MANAGEMENT**

**Land Spill:** Scrape up spilled material with shovels into a suitable container for recycle or disposal.

**Water Spill:** Stop leak if you can do so without risk. Warn other shipping. Material will sink. Consult an expert. No immediate action required.

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

**ENVIRONMENTAL PRECAUTIONS**

Prevent entry into waterways, sewers, basements or confined areas.

**SECTION 7 HANDLING AND STORAGE**

**HANDLING**

Prevent small spills and leakage to avoid slip hazard.

**Static Accumulator:** This material is not a static accumulator.

**STORAGE**

Do not store in open or unlabelled containers.

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

Substance Name	Form	Limit/Standard		Note	Source
MICA	Respirable fraction.	TWA	3 mg/m3		ACGIH

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

**ENGINEERING CONTROLS**

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:  
 No special requirements under ordinary conditions of use and with adequate ventilation.

**PERSONAL PROTECTION**

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

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

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

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

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

No protection is ordinarily required under normal conditions of use.

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

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

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

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

## ENVIRONMENTAL CONTROLS

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

<b>SECTION 9</b>	<b>PHYSICAL AND CHEMICAL PROPERTIES</b>
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**Note:** Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

## GENERAL INFORMATION

**Physical State:** Solid  
**Form:** Semi-fluid  
**Colour:** Grey  
**Odour:** Characteristic  
**Odour Threshold:** N/D

## IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 °C):** 1.59  
**Flash Point [Method]:** >221°C (430°F) [ASTM D-92]  
**Flammable Limits (Approximate volume % in air):** LEL: 0.9 UEL: 7.0  
**Autoignition Temperature:** >260°C (500°F)  
**Boiling Point / Range:** < 316°C (601°F) [Estimated]  
**Vapour Density (Air = 1):** N/D  
**Vapour Pressure:** < 0.013 kPa (0.1 mm Hg) at 20°C [Estimated]  
**Evaporation Rate (n-butyl acetate = 1):** < 0.01  
**pH:** N/D

**Log Pow (n-Octanol/Water Partition Coefficient):** N/A  
**Solubility in Water:** Negligible  
**Viscosity:** [N/D at 40°C]  
**Oxidizing Properties:** See Hazards Identification Section.

**OTHER INFORMATION**

**Freezing Point:** N/D  
**Melting Point:** 196°C (385°F)  
**Decomposition Temperature:** N/D

NOTE: Most physical properties above are for the oil component in the material.

**SECTION 10 STABILITY AND REACTIVITY**

**STABILITY:** Material is stable under normal conditions.

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

**MATERIALS TO AVOID:** Strong oxidizers

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

**HAZARDOUS POLYMERIZATION:** Will not occur.

**SECTION 11 TOXICOLOGICAL INFORMATION**

**ACUTE TOXICITY**

<u>Route of Exposure</u>	<u>Conclusion / Remarks</u>
<b>Inhalation</b>	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
<b>Ingestion</b>	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
<b>Skin</b>	
Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
<b>Eye</b>	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

**CHRONIC/OTHER EFFECTS**

**Contains:**

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

animals.

Additional information is available by request.

**CMR Status:** None.

Chemical Name	CAS Number	List Citations
MICA	12001-26-2	4

--REGULATORY LISTS SEARCHED--

1 = IARC 1  
2 = IARC 2A

3 = IARC 2B  
4 = ACGIH ALL

5 = ACGIH A1  
6 = ACGIH A2

<b>SECTION 12</b>	<b>ECOLOGICAL INFORMATION</b>
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The information given is based on data available for the material, the components of the material, and similar materials.

**ECOTOXICITY**

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

**MOBILITY**

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

**PERSISTENCE AND DEGRADABILITY**

**Biodegradation:**

Base oil component -- Expected to be inherently biodegradable

**BIOACCUMULATION POTENTIAL**

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

<b>SECTION 13</b>	<b>DISPOSAL CONSIDERATIONS</b>
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Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**DISPOSAL RECOMMENDATIONS**

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

**REGULATORY DISPOSAL INFORMATION**

**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain

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

<b>SECTION 14</b>	<b>TRANSPORT INFORMATION</b>
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**LAND (TDG):** Not Regulated for Land Transport

**LAND (DOT):** Not Regulated for Land Transport

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

**AIR (IATA):** Not Regulated for Air Transport

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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**WHMIS Classification:** Not controlled

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

**CEPA:** All components of this material are either on the Canadian Domestic Substances List (DSL), exempt, or have been notified under CEPA.

**Complies with the following national/regional chemical inventory requirements:** AICS, DSL, IECSC, KECI, PICCS

**The Following Ingredients are Cited on the Lists Below:**

Chemical Name	CAS Number	List Citations
ZINC	7440-66-6	6

--REGULATORY LISTS SEARCHED--

1 = TSCA 4  
 2 = TSCA 5a2

3 = TSCA 5e  
 4 = TSCA 6

5 = TSCA 12b  
 6 = NPRI

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

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Revision Changes:

- Section 06: Notification Procedures - Header was modified.
- Section 10: Materials To Avoid - Header was modified.
- Section 11: Acute Toxicity Table Header was modified.
- Section 09: Phys/Chem Properties Note was modified.
- Section 09: Colour was modified.
- Section 11: Ingestion Acute Lethality - Header was modified.
- Section 11: Inhalation - Header was modified.
- Section 09: Boiling Point C(F) was modified.
- Section 09: Evaporation Rate - Header was modified.
- Section 08: Personal Protection - Header was modified.
- Section 08: Comply with applicable regulations phrase was modified.
- Section 09: Vapour Pressure - Header was modified.
- Section 09: Vapour Pressure was modified.
- Section 11: Inhalation Lethality Test Data was modified.
- Section 11: Inhalation Irritation Test Data was modified.
- Section 05: Hazardous Combustion Products was modified.
- Section 06: Accidental Release- Spill Management- Water was modified.
- Section 09: Relative Density - Header was modified.
- Section 09: Flash Point C(F) was modified.
- Section 14: Sea (IMDG) - Header was modified.
- Section 14: Air (IATA) - Header was modified.
- Section 14: LAND (TDG) - Header was modified.
- Section 14: LAND (DOT) - Header was modified.
- Section 14: LAND (DOT) - Default was modified.
- Section 14: LAND (TDG) Default was modified.
- Section 14: Sea (IMDG) - Default was modified.
- Section 14: Air (IATA) - Default was modified.
- Section 15: National Chemical Inventory Listing - Header was modified.
- Section 15: National Chemical Inventory Listing was modified.
- Hazard Identification: Hazards Note was modified.
- Section 16: CA Prepared by - Header was modified.
- Section 09: Section 9 Footnotes was modified.
- Section 09: Oxidizing Properties was modified.
- Section 15: Canadian List Citations Table was modified.
- Section 01: Company Contact Methods Sorted by Priority was modified.
- Section 06: Protective Measures was added.
- Section 06: Accidental Release - Protective Measures - Header was added.
- Section 09: Form - Header was added.
- Section 09: Physical State was added.
- Section 09: Decomposition Temperature was added.
- Section 09: Decomposition Temp - Header was added.
- Section 09: Vapour Pressure was added.
- Section 01: Product Code was added.
- Section 01: Product Code - Header was added.
- Section 09: Form - Header was deleted.
- Section 09: Physical State was deleted.

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WHMIS Classification: Not controlled

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DGN: 5007465 (1015931)

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Prepared by: Imperial Oil Limited, IH and Product Safety

# SAFETY DATA SHEET

## DIESEL FUEL

000003000395

Version 5.2

Revision Date 2020/03/09

Print Date 2020/03/09



### SECTION 1. IDENTIFICATION

Product name : DIESEL FUEL

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

Product code : 103136, 103135, 103134, 103133, 103132, 103131, 101799, 102907, 102762, 102763, 102755, 102302, 102744, 101801, 100678, 100677, 101802, 100107, 100668, 100658, 100911, 100663, 100652, 100460, 100065, 101796, 101793, 101795, 101792, 101794, 101791, 100768, 100643, 100642, 100103, 101798, 101800, 101797, 101788, 101789, 101787, 102531, 100734, 100733, 100640, 100997, 100995, 100732, 100731, 100994

Manufacturer or supplier's details  
Petro-Canada  
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 : Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining diesels, marine diesels, MDO and naval distillates may have a higher flash point requirement.

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

### SECTION 2. HAZARDS IDENTIFICATION

#### Emergency Overview

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

#### GHS Classification

Flammable liquids : Category 3

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

### GHS label elements

Hazard pictograms :



Signal word : Danger

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

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

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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.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

**Hazardous components**

Chemical name	CAS-No.	Concentration
Kerosine (petroleum), hydrodesulfurized; Kerosine -unspecified	64742-81-0	70 - 100 %
Kerosine (petroleum); Straight run kerosine	8008-20-6	
Fuels, diesel; Gasoil -unspecified	68334-30-5	
Alkanes, C10-20-branched and linear	928771-01-1	0 - 30 %
Fatty acids, C16-18 and C18-unsatd., Me esters	67762-38-3	0 - 20 %

All above concentrations are in percent by weight.

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### 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,

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If swallowed	: for at least 15 minutes. Obtain medical attention. : Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice.
Most important symptoms and effects, both acute and delayed	: Harmful if inhaled. Respiratory, skin and eye irritation; nausea; cancer.
Notes to physician	: Treat symptomatically. For specialist advice physicians should contact the Poisons Information Service.

### SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Dry chemical Carbon dioxide (CO <sub>2</sub> ) Water fog. Foam
Unsuitable extinguishing media	: Do NOT use water jet.
Specific hazards during fire-fighting	: Cool closed containers exposed to fire with water spray.
Hazardous combustion products	: Carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), sulphur oxides (SO <sub>x</sub> ), smoke and irritating vapours as products of incomplete combustion.
Further information	: Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus for firefighting if necessary.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: For personal protection see section 8. 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.
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Smoking, eating and drinking should be prohibited in the application area.  
Use only with adequate ventilation.  
In case of insufficient ventilation, wear suitable respiratory equipment.  
Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.  
Avoid contact with skin, eyes and clothing.  
Do not ingest.  
Keep away from heat and sources of ignition.  
Keep container closed when not in use.

Conditions for safe storage : Store in original container.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep in a dry, cool and well-ventilated place.  
Keep in properly labelled containers.  
To maintain product quality, do not store in heat or direct sunlight.  
Ensure the storage containers are grounded/bonded.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Kerosine (petroleum), hydrodesulfurized; Kerosine - unspecified	64742-81-0	TWA	200 mg/m <sup>3</sup> (As total hydrocarbon vapour)	ACGIH
		TWA	200 mg/m <sup>3</sup> (total hydrocarbon vapor)	CA AB OEL
		TWA	525 mg/m <sup>3</sup>	CA ON OEL
		TWA	200 mg/m <sup>3</sup> (As total hydrocarbon vapour)	ACGIH
		TWA	200 mg/m <sup>3</sup> (total hydrocarbon vapor)	ACGIH
Kerosine (petroleum); Straight run kerosine	8008-20-6	TWA	200 mg/m <sup>3</sup> (total hydrocarbon vapor)	CA BC OEL
		TWA	200 mg/m <sup>3</sup> (total hydrocarbon vapor)	CA AB OEL
		TWA	200 mg/m <sup>3</sup> (total hydrocarbon vapor)	ACGIH
Fuels, diesel; Gasoil - unspecified	68334-30-5	TWA	100 mg/m <sup>3</sup> (total hydrocarbons)	CA AB OEL
		TWA (Vapour and	100 mg/m <sup>3</sup> (total hydrocar-	CA BC OEL

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		inhalable aerosols)	bons)	
		TWA (Inhalable fraction and vapor)	100 mg/m3 (total hydrocarbons)	ACGIH

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

**Personal protective equipment**

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

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

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

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

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

**Skin and body protection** : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

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

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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Bright oily liquid.
Colour	: Clear to yellow (This product may be dyed red for taxation purposes)
Odour	: Mild petroleum oil like.
Odour Threshold	: No data available
pH	: No data available
Melting point	: No data available
Boiling point/boiling range	: 150 - 371 °C (302 - 700 °F)
Decomposition temperature	No data available
Flash point	: > 40 °C (104 °F) Method: closed cup
Auto-Ignition Temperature	: 225 °C (437 °F)
Evaporation rate	: No data available
Flammability	: Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite.
Upper explosion limit	: 6 %(V)
Lower explosion limit	: 0.7 %(V)
Vapour pressure	: 7.5 mmHg (20 °C / 68 °F)
Relative vapour density	: 4.5
Relative density	: 0.8 - 0.88
Solubility(ies)	
Water solubility	: insoluble
Partition coefficient: n-octanol/water	: No data available
Viscosity	
Viscosity, kinematic	: 1.3 - 4.1 cSt (40 °C / 104 °F)

### SECTION 10. STABILITY AND REACTIVITY

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Reactivity	: Stable at normal ambient temperature and pressure.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Reactive with oxidising agents and acids.
Hazardous decomposition products	: May release CO <sub>x</sub> , NO <sub>x</sub> , SO <sub>x</sub> , smoke and irritating vapours when heated to decomposition.

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Eye contact  
Ingestion  
Inhalation  
Skin contact

#### Acute toxicity

##### Product:

Acute oral toxicity	: Remarks: No data available
Acute inhalation toxicity	: Acute toxicity estimate: 1.2 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	: Remarks: No data available

##### Components:

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

Acute oral toxicity	: LD50 (Rat): > 5,000 mg/kg,
Acute inhalation toxicity	: LC50 (Rat): > 5.2 mg/l Exposure time: 4 hrs Test atmosphere: dust/mist
Acute dermal toxicity	: LD50 (Rabbit): > 2,000 mg/kg,

#### **Kerosine (petroleum); Straight run kerosine:**

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

#### **Fuels, diesel; Gasoil -unspecified:**

Acute oral toxicity	: LD50 (Rat): 7,500 mg/kg,
Acute inhalation toxicity	: LC50 (Rat): 4.1 mg/l Exposure time: 4 h

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Test atmosphere: vapour

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

### Skin corrosion/irritation

**Product:**

Remarks: Causes skin irritation.

### Serious eye damage/eye irritation

**Product:**

Remarks: No data available

### Respiratory or skin sensitisation

**Product:**

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

### Germ cell mutagenicity

**Product:**

Genotoxicity in vitro                      Remarks: No data available

Genotoxicity in vivo                        Remarks: No data available

### Carcinogenicity

**Product:**

Carcinogenicity - Assessment            Suspected of causing cancer.

### Reproductive toxicity

**Product:**

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

### STOT - single exposure

**Product:**

Remarks: May cause drowsiness or dizziness.

### STOT - repeated exposure

**Product:**

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

No data available

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### Aspiration toxicity

#### Product:

May be fatal if swallowed and enters airways.

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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

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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.

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### SECTION 14. TRANSPORT INFORMATION

#### International Regulations

##### IATA-DGR

UN/ID No. : UN 1202  
Proper shipping name : Diesel fuel  
Class : 3  
Packing group : III  
Labels : Class 3 - Flammable Liquid  
Packing instruction (cargo aircraft) : 366

##### IMDG-Code

UN number : UN 1202  
Proper shipping name : DIESEL FUEL  
Class : 3  
Packing group : III  
Labels : 3  
EmS Code : F-E, S-E  
Marine pollutant : no

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

#### National Regulations

##### TDG

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

### SECTION 15. REGULATORY INFORMATION

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

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

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

### SECTION 16. OTHER INFORMATION

For Copy of SDS : Internet: [www.petro-canada.ca/msds](http://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

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

Revision Date : 2020/03/09

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

# SAFETY DATA SHEET

## GASOLINE, UNLEADED



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### 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 (CO<sub>2</sub>)  
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 <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), polynuclear aromatic hydrocarbons, phenols, aldehydes, ketones, smoke and irritating vapours as products of incomplete combustion. |
| Further information                           | : Prevent fire extinguishing water from contaminating surface water or the ground water system.  |
| Special protective equipment for firefighters | : Wear self-contained breathing apparatus and full protective wear.<br>Wear a positive-pressure supplied-air respirator with full face-piece.  |
- 

### SECTION 6. ACCIDENTAL RELEASE MEASURES

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

### SECTION 7. HANDLING AND STORAGE

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

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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 <sup>3</sup>	CA AB OEL
		TWA	20 ppm	CA BC OEL
		TWAEV	50 ppm 188 mg/m <sup>3</sup>	CA QC OEL
benzene	71-43-2	TWA	20 ppm	ACGIH
		TWA	0.5 ppm 1.6 mg/m <sup>3</sup>	CA AB OEL
		STEL	2.5 ppm 8 mg/m <sup>3</sup>	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 <sup>3</sup>	CA QC OEL
		STEV	5 ppm 15.5 mg/m <sup>3</sup>	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
		STEL	500 ppm	ACGIH
ethanol	64-17-5	TWA	1,000 ppm 1,880 mg/m <sup>3</sup>	CA AB OEL
		STEL	1,000 ppm	CA BC OEL
		TWAEV	1,000 ppm 1,880 mg/m <sup>3</sup>	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.

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### 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

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### 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<sub>x</sub>, NO<sub>x</sub>, phenols, polycyclic aromatic hydrocarbons, aldehydes, ketones, smoke and irritating vapours when heated to decomposition.

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### 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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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

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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



# SAFETY DATA SHEET

## PROPANE

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### SECTION 1. IDENTIFICATION

Product name : PROPANE

Synonyms : Propane HD-5, Propane commercial, Liquefied Petroleum Gas (LPG), C<sub>3</sub>H<sub>8</sub>, 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

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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 frost-bite.  
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, CO<sub>2</sub>), 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 <sup>3</sup>	CA QC OEL
propene	115-07-1	TWA	500 ppm 860 mg/m <sup>3</sup>	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 <sup>3</sup>	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.

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### 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

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### 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 <sub>x</sub> , 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

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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.

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### 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

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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

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## SECTION 16. OTHER INFORMATION

For Copy of SDS : Internet: [www.petro-canada.ca/msds](http://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 : 2020/01/27

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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

NAPA® PREM PERF GEAR OIL SAE  
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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**

<b>Components</b>	<b>CAS-No.</b>	<b>Concentration</b>
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 (CO<sub>2</sub>), 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.

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### 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

<b>Physical state</b>	liquid
<b>Form</b>	No data
<b>Colour</b>	amber
<b>Odour</b>	No data
<b>Boiling point/boiling range</b>	218.30 °C / 424.9 °F@ 760.00 mmHg
<b>pH</b>	No data
<b>Flash point</b>	(>)432 °F / 222 °C, Cleveland open cup
<b>Evaporation rate</b>	> 1 (Ethyl Ether)
<b>Explosion limits</b>	No data
<b>Vapour pressure</b>	0.10 mmHg
<b>Vapour density</b>	(>) 1 (AIR=1)
<b>Density</b>	0.8916 g/cm <sup>3</sup> @ 60.01 °F / 15.56 °C 7.28 lb/gal @ 60.1 °F / 15.6 °C
<b>Solubility</b>	No data
<b>Partition coefficient: n-octanol/water</b>	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
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### 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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	<b>Health</b>	<b>Flammability</b>	<b>Reactivity</b>	<b>Other</b>
<b>HMIS</b>	1	1	0	
<b>NFPA</b>	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).



# SAFETY DATA SHEET

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Revised edition no : 6

Date : 6 / 1 / 2014

Supersedes : 0 / 0 / 0

## Gulf Harmony AW 32

10103/32/1/6

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

**Product identifier** : Gulf Harmony AW 32  
**Viscosity Grade** : ISO VG 32  
**Product code Gulf Oil International** : 10103/32/1/6  
**Relevant identified uses of the substance or mixture and uses advised against** : Industrial hydraulic oil.  
This oil should not be used for any other purpose than the intended use as a hydraulic oil without expert advice.  
**Details of the supplier of the safety data sheet** : Gulf Oil Lubricants India Ltd, IN Centre, 12th Road, Marol, Andheri (East), Mumbai - 400 093  
**Emergency telephone number** : +91 22 66487777

### 2. HAZARDS IDENTIFICATION

**Classification of the substance or mixture** : Not classified as dangerous under EC criteria.  
**Most important adverse physico-chemical effects** : Combustible liquid.  
**Most important adverse human health effects** : Prolonged or repeated skin contact with the material will remove natural oils and could lead to a dermatitis.  
**Most important adverse environmental effects** : No specific risk for the environment.

#### Label elements:

- **safety advices** : Do not empty into drains; dispose of this material and its container in a safe way.  
**Other hazards** : Injection under the skin can occur when using high pressure equipment. Overexposure to oil mist may cause respiratory irritations.  
Oil mist deposited on surfaces may cause slip hazard.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical characterization** : Mixture of highly refined mineral oils and additives.(PCA-content < 3% - IP 346)

Substance name	Contents	CAS No	EC No	Annex No	Ref REACH	Classification
Zinc dialkyl dithiophosphate	: 0.36 - 0.66 %	68649-42-3	272-028-3	----	----	Xi; R36/38
Alkyl phenol	: 0.11 - 0.22 %	----	----	----	----	N; R50-53
Long chain alkenyl succinimide	: 0.06 - 0.11 %	----	----	----	----	
Calcium alkaryl sulfonate	: 0.006 - 0.011 %	----	----	----	----	Xi; R38-41
Aryl phosphine	: 0.0029 - 0.0055 %	----	----	----	----	Xn; R48/20/22 R43 N; R50-53

### 4. FIRST AID MEASURES

#### Description of first aid measures:

- **after inhalation** : Assure fresh air breathing. If you feel unwell, seek medical advice.  
- **after contact with skin** : Remove contaminated clothing and shoes. Wash skin thoroughly with mild soap and water. Never use kerosine or gasoline for cleaning the skin.  
- **after contact with the eyes** : Rinse immediately with plenty of water. Seek medical attention if irritation develops.  
- **after ingestion** : Do not induce vomiting. Seek medical attention immediately.  
- **after injection** : If injected under the skin when using high pressure equipment, send casualty immediately to a hospital, even when there are few or no symptoms.

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## SECTION 4. FIRST AID MEASURES (continued)

- Most important symptoms and effects, both acute and delayed** : Symptoms of overexposure to vapours include drowsiness, weakness, headache, dizziness, nausea, vomiting, dimming of vision.
- Indication of any immediate medical attention and special treatment needed** : High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. Often these injuries require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of the injury.

## 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media** : Water fog. Carbon dioxide. Foam. Dry chemical product.
- Extinguishing media which shall not be used for safety reasons** : Do not use a heavy water stream.
- Special hazards arising from the substance or mixture** : Under fire conditions, hazardous fumes will be present.
- Advice for firefighters** : Do not enter fire area without proper protective equipment, including respiratory protection. Wear self-contained breathing apparatus, rubber boots and thick rubber gloves. Use water spray or fog for cooling exposed containers. Avoid fire-fighting water to enter environment.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures:

- for non-emergency personnel** : Evacuate unnecessary personnel.
- for emergency responders** : Equip cleanup crew with proper protection. Wear suitable protective clothing, gloves and eye or face protection. Eliminate every possible source of ignition.
- Environmental precautions** : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Avoid release to the environment. Notify authorities if liquid enters sewers or public waters. Spill area may be slippery.
- Methods and material for containment and cleaning up** : Clean up any spills as soon as possible, using an absorbent material to collect it. Use suitable disposal containers.
- Reference to other sections** : See Heading 8 & 13

## 7. HANDLING AND STORAGE

- Precautions for safe handling** : Keep away from sources of ignition. No naked lights. No smoking. Use only in well ventilated areas. Avoid release to the environment. Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with soap and water before leaving work.
- Conditions for safe storage, including any incompatibilities** : Store this product in a dry location where it can be protected from the elements. Store in tightly closed, properly ventilated containers away from heat, sparks, open flame, strong oxidizers, radiations, and other initiators. Keep at temperature not exceeding 50°C.
- Specific end use(s)** : Industrial hydraulic oil.  
This oil should not be used for any other purpose than the intended use as a hydraulic oil without expert advice.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters:

#### Occupational exposure limit values:

- Australia : National exposure standards for atmospheric contaminants in the occupational environment; Time-Weighted Average (normal eight-hour working day, for a five-day working week): 5 mg/m<sup>3</sup> for oil mist, refined mineral. (National Occupational Health & Safety Commission [NOHSC: 1003(1995)])
- Canada : The American Conference of Governmental Industrial Hygienists (ACGIH) has assigned mineral oil mist a threshold limit value (TLV) of 5 mg/m(3) as a Time Weighted Average (TWA) for a normal 8-hour workday and a 40-hour workweek and a short-term exposure limit (STEL) of 10 mg/m(3) for periods not to exceed 15 minutes. Exposures at the STEL concentration should not be repeated more than four times a day and should be separated by intervals of at least 60 minutes. [ACGIH 1994, p. 28]
- EU : Occupational Exposure Standard (OES) of 5 mg/m<sup>3</sup>, 8-hour time-weighted average reference period for oil mist.
- USA : The American Conference of Governmental Industrial Hygienists (ACGIH) has assigned mineral oil mist a threshold limit value (TLV) of 5 mg/m(3) as a Time Weighted Average (TWA) for a normal 8-hour workday and a 40-hour workweek and a short-term exposure limit (STEL) of 10 mg/m(3) for periods not to exceed 15 minutes. Exposures at the STEL concentration should not be repeated more than four times a day and should be separated by intervals of at least 60 minutes. [ACGIH 1994, p. 28]

### Occupational Exposure Limits

Biological limit values : No data available.

### Exposure controls:

#### Individual protection measures, such as personal protective equipment:

- eye / face protection : Chemical goggles or safety glasses (EN 166)
- skin protection : Wear suitable protective clothing.
- hand protection : Wear suitable gloves resistant to chemical penetration. (EN 374)
- respiratory protection : The use of Filtertype A (EN 141) is recommended If exceeding the Occupational Exposure Limit.
- others : Do not wear leather soled shoes.

Environmental exposure controls : Avoid release to the environment.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties:

- physical state : Oily liquid.
- colour : Yellow-brown.
- odour : Light odour of petroleum.
- flash point : 202°C
- density @ 15°C : 870 kg/m<sup>3</sup>
- solubility in water : Insoluble.
- viscosity @ 40°C : 31.2 cSt
- pour point : -24°C
- Other information : See Product Data Sheet for detailed information.

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### 10. STABILITY AND REACTIVITY

Reactivity	: No data available.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: None under normal conditions.
Conditions to avoid	: Extremely high or low temperatures.
Incompatible materials	: Strong oxidizing agents.
Hazardous decomposition products	: None under normal conditions.

### 11. TOXICOLOGICAL INFORMATION

#### Information on toxicological effects:

- acute toxicity	: No specific toxicity data on this product available.
- irritation	: Not expected to be an irritant to eyes or skin. Inhalation of fumes or vapours may cause respiratory irritation.
- corrosivity	: No adverse health effects were noted.
- sensitisation	: No sensitization effects known.
- carcinogenicity	: This product contains mineral oils which are considered to be severely refined and not considered to be carcinogenic under IARC. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.
- mutagenicity	: Not expected to be mutagenetic.
- reproductive toxicity	: Not expected to be toxic.

#### Information on likely routes of exposure:

- after ingestion	: Ingestion may cause nausea, vomiting and diarrhoea.
- after inhalation	: Inhalation of vapours may cause respiratory irritation.
- after skincontact	: Prolonged or repeated skin contact with the material will remove natural oils and could lead to a dermatitis.
- after eyecontact	: Slight eye irritant upon direct contact.
Symptoms related to the physical, chemical and toxicological characteristics	: No adverse health effects were noted.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	: No adverse health effects were noted
Other toxicological information	: No data available.

### 12. ECOLOGICAL INFORMATION

Toxicity	: No specific ecotoxicity data on this product available.
Persistence and degradability	: Not determined.
Bioaccumulative potential	: No data available.
Mobility in soil	: It is to be expected small mobility in soil. Some or a few components may get into the soil and may cause pollution of ground water. Product spreads on the water surface.
Results of PBT and vPvB assessment	: Not applicable.
Other adverse effects	: May contaminate water supplies.
Biodegradation	: No data available.



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## 13. DISPOSAL CONSIDERATIONS

- Waste Disposal** : Dispose in a safe manner in accordance with local/national regulations.
- Waste treatment methods** : See Directive 2001/118/EC
- Waste Code European Waste List** : 13 02 05 - mineral-based non-chlorinated engine, gear and lubricating oils.  
15 01 10 - packaging containing residues of or contaminated by dangerous substances.

## 14. TRANSPORT INFORMATION

Not regulated.

## 15. REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture:

- **Australian Inventory of Chemical Substances (AICS)** : All components are in compliance with chemical notification requirements in Australia.
- **Canadian Environmental Protection Act (CEPA)** : All components are in compliance with the Canadian Environmental Protection Act (CEPA) and are present on the Domestic Substances List (DSL).
- **European Inventory of Existing Commercial Chemical Substances (EINECS)** : All components listed.
- **USA Toxic Substances Control Act (TSCA)** : All components of this material are on the US TSCA Inventory or are exempt.
- **Germany** : Water Hazard Class: 1 - low hazard to waters

## 16. OTHER INFORMATION

- Revision Indicators** : None.
- Key to abbreviations and acronyms used in the safety data sheet** : ACGIH = American Conference of Industrial Hygienists  
CLP = Classification and Labelling of Substances and Preparations  
EC = European Commission. EN = European Norm  
IARC = International Agency for Research on Cancer  
IP = Institute of Petroleum. ISO = International Organization for Standardization  
NLGI = National Lubricating Grease Institute  
PCA = Polycyclic Aromatics  
TLV = Threshold Limit Value. TWA = Time Weighted Average  
VG = Viscosity Grade
- Key literature references and sources for data** : Concawe Report 01/53, Concawe Report 01/54, Concawe Report 05/87.  
Regulations (EC) No 1907/2006, 1272/2008 & 453/2010 of the European Parliament and of the Council.
- List of relevant R-phrases** : R36/38 : Irritating to eyes and skin.  
R38: Irritating to skin.  
R41: Risk of serious damage to eyes.  
R43 : May cause sensitization by skin contact.  
R48/20/22 : Harmful : danger of serious damage to health by prolonged exposure through inhalation and if swallowed.  
R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Training advice** : See information supplied by the manufacturer.

The contents and format of this SDS are in accordance with COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

**DISCLAIMER OF LIABILITY** The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do 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. This SDS was prepared and is to be used only for this

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product. If the product is used as a component in another product, this SDS information may not be applicable.

End of document

# Material Safety Data Sheet

TWO CYCLE MOTOR OIL



## 1. Product and company identification

<b>Product name</b>	: TWO CYCLE MOTOR OIL
<b>Code</b>	: TWOCYC
<b>Material uses</b>	: 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.
<b>Manufacturer</b>	: Petro-Canada Lubricants Inc. 2310 Lakeshore Road West Mississauga, Ontario Canada L5J 1K2
<b><u>In case of emergency</u></b>	: Suncor Energy: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

## 2. Hazards identification

<b>Physical state</b>	: Viscous liquid.
<b>Odour</b>	: Mild petroleum oil like.
<b>WHMIS (Canada)</b>	: Not controlled under WHMIS (Canada).
<b>OSHA/HCS status</b>	: 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.
<b>Emergency overview</b>	: No specific hazard.
<b>Routes of entry</b>	: Dermal contact. Eye contact. Inhalation. Ingestion.
<b><u>Potential acute health effects</u></b>	
<b>Inhalation</b>	: No known significant effects or critical hazards.
<b>Ingestion</b>	: No known significant effects or critical hazards.
<b>Skin</b>	: Slightly irritating to the skin.
<b>Eyes</b>	: Slightly irritating to the eyes.
<b><u>Potential chronic health effects</u></b>	
<b>Chronic effects</b>	: No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: Not listed as carcinogenic by OSHA, NTP or IARC.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.
<b>Fertility effects</b>	: No known significant effects or critical hazards.
<b>Medical conditions aggravated by over-exposure</b>	: 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

<b><u>Name</u></b>	<b><u>CAS number</u></b>	<b><u>%</u></b>
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, CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), sulphur oxides (SO<sub>x</sub>), 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).	<b>ACGIH TLV (United States). Notes: (Mineral oil)</b> TWA: 5 mg/m <sup>3</sup> , (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<sub>x</sub>, NO<sub>x</sub>, SO<sub>x</sub>, aldehydes, methacrylate monomers, asphyxiants, smoke and irritating vapours when heated to decomposition.

## 11 . Toxicological information

### Acute toxicity

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

## 11 . Toxicological information

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

**Conclusion/Summary** : Not available.

### Chronic toxicity

**Conclusion/Summary** : Not available.

### Irritation/Corrosion

**Conclusion/Summary** : Not available.

### Sensitiser

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Classification

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

### Mutagenicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

## 12 . Ecological information

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

### Aquatic ecotoxicity

**Conclusion/Summary** : Not available.

### Biodegradability

**Conclusion/Summary** : Not available.

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

## 13 . Disposal considerations

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

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

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

## 14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
<b>TDG Classification</b>	Not regulated.	-	-	-		-
<b>DOT Classification</b>	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.

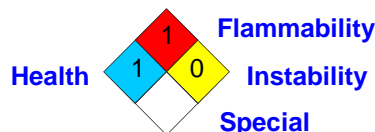
**Europe inventory** : All components are listed or exempted.

**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

<b>Hazardous Material Information System (U.S.A.)</b> :	<b>Health</b>	1
	<b>Flammability</b>	1
	<b>Physical hazards</b>	0
	<b>Personal protection</b>	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](http://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

### PRODUCT

**Product Name:** MOBIL 1 ESP FORMULA 5W-30  
**Product Description:** Synthetic Base Stocks and Additives  
**Product Code:** 2015101010K0, 476341-85  
**Intended Use:** Engine oil

### COMPANY IDENTIFICATION

**Supplier:** East Coast Lubes Pty Ltd (Queensland and Northern Territory)  
A.B.N. 37 117 203 611  
Cnr North and Mort Streets  
Toowoomba, Queensland 4350 Australia

**24 Hour Emergency Telephone** 1300 131 001

**Supplier General Contact** 1800 069 019

**Supplier:** Southern Cross Lubes (Victoria and Tasmania, New South Wales and Australian Capital Territory)  
58-66 Ajax Road  
Altona, Victoria 3018, Australia

**24 Hour Emergency Telephone** 1300 131 001

**Product Technical Information**

**Supplier General Contact** 1300 466 245  
1300 552 861

**Supplier:** Perkal Pty Ltd Trading as Statewide Oil (Western Australia)  
A.B.N. 43 009 283 363  
14 Beete Street  
Welshpool, Western Australia 6106 Australia

**24 Hour Emergency Telephone** (8:00am to 4:30pm Mon to Fri) 1300 919 904

**Product Technical Information**

**Supplier General Contact** (08) 9350 6777  
(08) 9350 6777

**Supplier:** Perkal Pty Ltd Trading as Statewide Oil (South Australia)  
A.B.N. 43 009 283 363  
6-10 Streiff Rd  
Wingfield, South Australia 5013 Australia

**24 Hour Emergency Telephone** (8:00am to 4:30pm Mon to Fri) 1300 919 904

**Product Technical Information**

**Supplier General Contact** (08) 8359 8995  
(08) 8359 8995

**SECTION 2 HAZARDS IDENTIFICATION**

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

**Contains:** C14-16-18 ALKYL PHENOL May produce an allergic reaction.

**Other hazard information:**

**Physical / Chemical Hazards:**  
No significant hazards.

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

**Environmental Hazards:**  
No significant hazards.

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

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

This material is defined as a mixture.

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

Name	CAS#	Concentration*	GHS Hazard Codes
C14-16-18 ALKYL PHENOL	Confidential	0.1 - < 1%	H317, H373
POLYOLEFIN POLYAMINE SUCCINIMIDE	147880-09-9	1 - < 5%	None

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Other ingredients determined not to be hazardous up to 100%.

**SECTION 4 FIRST AID MEASURES**

**INHALATION**

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

**SKIN CONTACT**

Product Name: MOBIL 1 ESP FORMULA 5W-30

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

## EYE CONTACT

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

## INGESTION

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

## NOTE TO PHYSICIAN

None

## SECTION 5 FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight streams of water

### FIRE FIGHTING

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

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

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** >200°C (392°F) [ASTM D-92]

**Flammable Limits (Approximate volume % in air):** LEL: 0.9 UEL: 7.0

**Autoignition Temperature:** N/D

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### NOTIFICATION PROCEDURES

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

### PROTECTIVE MEASURES

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

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## SPILL MANAGEMENT

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

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

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

## ENVIRONMENTAL PRECAUTIONS

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

## SECTION 7

## HANDLING AND STORAGE

### HANDLING

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

**Static Accumulator:** This material is a static accumulator.

### STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

Material is defined under the National Standard [NOHSC:1015] Storage and Handling of Workplace Dangerous Goods.

## SECTION 8

## EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure limits/standards for materials that can be formed when handling this product:

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

### Biological limits

No biological limits allocated.

## ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:  
No special requirements under ordinary conditions of use and with adequate ventilation.

## PERSONAL PROTECTION

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

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

Particulate

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

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

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

Nitrile, Viton

No protection is ordinarily required under normal conditions of use.

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

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

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

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

## ENVIRONMENTAL CONTROLS

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

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

**GENERAL INFORMATION**

**Physical State:** Liquid  
**Form:** Clear  
**Colour:** Amber  
**Odour:** Characteristic  
**Odour Threshold:** N/D

**IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION**

**Relative Density (at 15 °C):** 0.851  
**Flammability (Solid, Gas):** N/A  
**Flash Point [Method]:** >200°C (392°F) [ASTM D-92]  
**Flammable Limits (Approximate volume % in air):** LEL: 0.9 UEL: 7.0  
**Autoignition Temperature:** N/D  
**Boiling Point / Range:** N/D  
**Decomposition Temperature:** N/D  
**Vapour Density (Air = 1):** > 2 at 101 kPa  
**Vapour Pressure:** < 0.013 kPa (0.1 mm Hg) at 20 °C  
**Evaporation Rate (n-butyl acetate = 1):** N/D  
**pH:** N/A  
**Log Pow (n-Octanol/Water Partition Coefficient):** > 3.5  
**Solubility in Water:** Negligible  
**Viscosity:** 72.8 cSt (72.8 mm<sup>2</sup>/sec) at 40 °C | 12.1 cSt (12.1 mm<sup>2</sup>/sec) at 100°C  
**Oxidizing Properties:** See Hazards Identification Section.

**OTHER INFORMATION**

**Freezing Point:** N/D  
**Melting Point:** N/A  
**Pour Point:** -36°C (-33°F)

<b>SECTION 10</b>	<b>STABILITY AND REACTIVITY</b>
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**STABILITY:** Material is stable under normal conditions.

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

**INCOMPATIBLE MATERIALS:** Strong oxidisers

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

**POSSIBILITY OF HAZARDOUS REACTIONS:** Hazardous polymerization will not occur.

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
-------------------	----------------------------------

**INFORMATION ON TOXICOLOGICAL EFFECTS**

<u>Hazard Class</u>	<u>Conclusion / Remarks</u>
<b>Inhalation</b>	
Acute Toxicity: No end point data for	Minimally Toxic. Based on assessment of the components.

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material.	
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
<b>Ingestion</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
<b>Skin</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
<b>Eye</b>	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
<b>Sensitisation</b>	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
<b>Aspiration:</b> Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
<b>Germ Cell Mutagenicity:</b> No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
<b>Carcinogenicity:</b> No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
<b>Reproductive Toxicity:</b> No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
<b>Lactation:</b> No end point data for material.	Not expected to cause harm to breast-fed children.
<b>Specific Target Organ Toxicity (STOT)</b>	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

## OTHER INFORMATION

### For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

Diesel engine oils: Not carcinogenic in animals tests. Used and unused diesel engine oils did not produce any carcinogenic effects in chronic mouse skin painting studies. Oils that are used in gasoline engines may become hazardous and display the following properties: Carcinogenic in animal tests. Caused mutations in vitro. Possible allergen and photoallergen. Contains polycyclic aromatic compounds (PAC) from combustion products of gasoline and/or thermal degradation products.

### Contains:

Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitising in test animals and humans.

### IARC Classification:

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

--REGULATORY LISTS SEARCHED--

1 = IARC 1

2 = IARC 2A

3 = IARC 2B

<b>SECTION 12</b>	<b>ECOLOGICAL INFORMATION</b>
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The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

**ECOTOXICITY**

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

**MOBILITY**

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

<b>SECTION 13</b>	<b>DISPOSAL CONSIDERATIONS</b>
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Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**DISPOSAL RECOMMENDATIONS**

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

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

<b>SECTION 14</b>	<b>TRANSPORT INFORMATION</b>
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**LAND (ADG) :** Not Regulated for Land Transport

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

**Marine Pollutant:** No

**AIR (IATA):** Not Regulated for Air Transport

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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This material is not considered hazardous according to Australia Model Work Health and Safety Regulations.

Product is not regulated according to Australian Dangerous Goods Code.

No Poison Schedule number allocated by the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) established under the Therapeutic Goods Act.

AS1940 COMBUSTIBLE CLASS: C2

**REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS**

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

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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**KEY TO ABBREVIATIONS AND ACRONYMS:**

N/D = Not determined, N/A = Not applicable, STEL = Short-Term Exposure Limit, TWA = Time-Weighted Average

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

H317: May cause allergic skin reaction; Skin Sensitization, Cat 1

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

H413: May cause long lasting harmful effects to aquatic life; Chronic Env Tox, Cat 4

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Composition: Component Table information was modified.

Composition: No components information was added.

Composition: No components information was deleted.

Section 15: National Chemical Inventory Listing information was modified.

The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to



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DGN: 7053753DAU (1009979)

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Prepared by: Exxon Mobil Corporation  
EMBSI, Clinton NJ USA  
Contact Point: See Section 1 for Local Contact number

**End of (M)SDS**

# 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 (H<sub>2</sub>S) 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, H<sub>2</sub>S 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 H<sub>2</sub>S, see Chevron MSDS No. 301.

## **SECTION 5 FIRE FIGHTING MEASURES**

**EXTINGUISHING MEDIA:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) 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 (H<sub>2</sub>S) 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 H<sub>2</sub>S is present. See Exposure Controls/Personal Protection -Section 8. Do not attempt rescue of a person over exposed to H<sub>2</sub>S 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 H<sub>2</sub>S, 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 mm<sup>2</sup>/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

**ORIGINAL ISSUE:** January 15, 1990

**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 <sup>a</sup>	LC <sup>b</sup>
				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.

<sup>a</sup>Oral-Rat LD<sub>50</sub> (mg/kg)  
<sup>b</sup>Inhalation-Rat LC<sub>50</sub>

## 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

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## 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**

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**SECTION 4: FIRST AID MEASURES**

<b>INHALATION: (BREATHING)</b>	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.
<b>EYES:</b>	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.
<b>SKIN:</b>	Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists.
<b>INGESTION: (SWALLOWING)</b>	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.
<b>NOTE TO PHYSICIANS:</b>	Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for additional information.

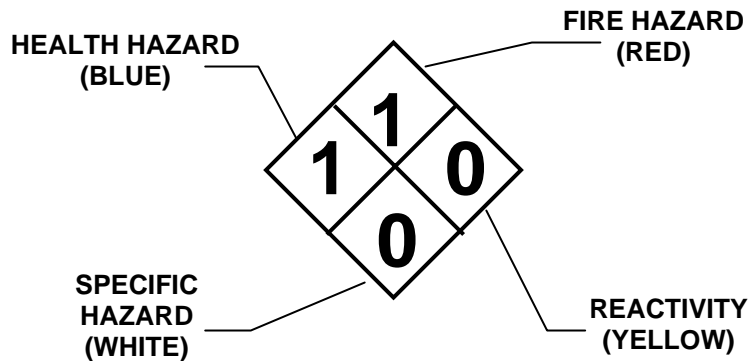
**SECTION 5: FIRE FIGHTING MEASURES**

<b>FLASH POINT:</b>	>200°F (93°C) (minimum) Pensky-Martens Closed Cup
<b>FLAMMABLE LIMITS IN AIR:</b>	Not available.
<b>AUTOIGNITION TEMPERATURE:</b>	Not available.
<b>HAZARDOUS COMBUSTION PRODUCTS:</b>	Decomposition and combustion materials may be toxic. Burning may produce phosgene gas, nitrogen oxides, carbon monoxide, and unidentified organic compounds.
<b>CONDITIONS OF FLAMMABILITY:</b>	Heat, sparks, or flame. Product may burn but does not ignite readily.
<b>EXTINGUISHING MEDIA:</b>	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

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**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.

<b>SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES</b>
--

**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**

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**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

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

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

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

## SECTION 12: ECOLOGICAL INFORMATION

**ECOTOXICITY:** Not available.

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

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

## SECTION 13: DISPOSAL CONSIDERATIONS

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

## SECTION 14: TRANSPORT INFORMATION

**DOT:** Not regulated.

**TDG:** Not regulated.

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

## SECTION 15: REGULATORY INFORMATION

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

# USED OIL MATERIAL SAFETY DATA SHEET

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**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.

<b>SECTION 16: OTHER INFORMATION</b>
--------------------------------------

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

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

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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 3**

**Immediately Reportable Spill Quantities**

<b>Item No.</b>	<b>TDGA Class</b>	<b>Description of Contaminant</b>	<b>Amount Spilled</b>
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 <sub>2</sub> 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 4**

### **Figures**

