



# **Spill Contingency Plan V2.0**

**Effective date: October 2024**

## **Diagras Project - Hardy Lake Area, Northwest Territories**

### **Northwest Territories Mining District**

Arctic Star Exploration Corp.  
#1100 – 1111 Melville Street  
Vancouver, BC, V6E 3V6

October 2024

## Plain Language Summary

This Plan outlines Arctic Star Exploration Corp.'s Spill Contingency Plan, the process under which it manages a spill in the event one occurs. This Plan also contains a project description.

## Revision History

The previous Plan was submitted by Margaret Lake Diamonds for the Diagras property 2018.

Revisions are largely administrative.

Revision Date	Section	Revision
July 2018	Throughout	Updated references to AANDC Inspectors as GNWT Department of Lands Inspector
July 2018	Reporting Procedures	Updated reporting procedures to include making a reasonable effort to inform public that may be adversely affected
Oct 2024	Preface	Add Glossary and Abbreviations Table
Oct 2024	Throughout	Update contact names and numbers
Oct 2024	Property Location and Description	Update information and maps
Oct 2024	Project Description	Update with information from past 7 years

## Table of Contents

<b>Revision History</b>	<b>2</b>
<b>Glossary and Abbreviations</b>	<b>4</b>
<b>Introduction &amp; Project Details</b>	<b>5</b>
<b>Effective Date</b>	<b>6</b>
<b>Purpose and Scope</b>	<b>7</b>
<b>Environmental Policy</b>	<b>7</b>
<b>Project Description</b>	<b>8</b>
<b>Site Description</b>	<b>8</b>
<b>Hazardous Materials on Site</b>	<b>11</b>
<b>Existing Preventative Measures</b>	<b>13</b>
<b>Response Organization</b>	<b>14</b>
<b>Action Plan</b>	<b>16</b>
<b>Potential Environmental Impacts of Spill</b>	<b>18</b>
<b>Spill Procedures</b>	<b>19</b>
<b>Resource Inventory</b>	<b>23</b>
<b>Training Program</b>	<b>24</b>
<b>Figure 1: Site Location Map</b>	<b>9</b>
<b>Figure 2: Detailed Sketch of Site Plan</b>	<b>10</b>
<b>Figure 3: Detailed camp layout, fuel storage, grey water, incinerator</b>	<b>11</b>
<b>Table 1: List of Hazardous Material, Containment and Quantity</b>	<b>12</b>
<b>Table 2: List of hazardous materials, Potential Events and Volumes</b>	<b>16</b>
<b>Appendix A: Spill Report Form</b>	<b>25</b>
<b>Appendix B3: Reportable Spill Quantities</b>	<b>26</b>
<b>Appendix C: Material Safety Data Sheets</b>	<b>27</b>

## Glossary and Abbreviations

<b>Word, Term, Abbreviation</b>	<b>Meaning</b>
ADD	Arctic Star Exploration Corp.
AIMAIO	Akaiicho Interim Measures Agreement Implementation Office
ARD	Acid Rock Drainage
CIRNAC	Crown–Indigenous Relations and Northern Affairs Canada
DKFN	Deninu KųęFirst Nation
ECCC	Environment and Climate Change Canada
FRMC	Fort Resolution Métis Council
GNWT	Government of the Northwest Territories
KIA	Kitimeot Inuit Association
KBWG	Kwe Beh Working Group
Km	Kilometer
LKDFN	Lútsël K'é Dene First Nation
LUP	Land Use Permit
NSMA	North Slave Métis Alliance
NGO	Non-Government Organizations
NWT or NT	Northwest Territories
Plan or PLAN	Engagement Plan
PWNHC	Prince of Wales Northern Heritage Center
RC	Reverse Circulation
the Company	Arctic Star Exploration Corp.
TG	Tlichų Government
UTV	Utility task vehicle, ATV, quad
V.P. Exploration	Vice President Exploration
WLWB	Wek'èezhii Land & Water Board
WRRB	Wek'èezhii Renewable Resources Board
YKDFN	Yellowknives Dene First Nation

**Arctic Star Exploration Corp. ('Arctic Star or ADD')**  
***Exploration Operations Document for the Northwest Territories***

**Contingency Plan for Material Spills in Exploration Camps and  
Drilling Operations  
October 2024**

**Introduction and Project Details**

Arctic Star Exploration Corp. has established this Spill Contingency plan to cover its activities during the proposed exploration and diamond drilling program on the "Diagras" property.

This Plan is modeled after, and follows the "Guidelines for Spill Contingency Planning, prepared by Water Resources Division Indian and Northern Affairs Canada, April 2007"

The plan is designed so that a coordinated response to spills will occur, and any spill will be dealt with in a timely and efficient manner. All personnel handling fuel or chemicals shall make themselves familiar with the plan and the plan will be part of the induction to new personnel to the drilling program.

During this drill and surface exploration program 205 liter fuel drums flown in by float and ski equipped aircraft, or trucked in winter roads will be used for fuel storage. The Drilling and surface exploration Crew will be housed at a new exploration camp.

Arctic Star is applying to renew Land Use permit W2017C000C which is expiring in December 2024. Once approved the replacement Land Use Permit Number should be recorded below for copies of this spill contingency plan used in the field.

**LAND USE PERMIT NUMBER:** \_\_\_\_\_

This Plan was prepared and approved by Arctic Star Exploration Corp. Additional information or copies are available from Arctic Star Exploration Corp. at (604) 218-8772.

## **Company Name and Mailing address:**

Arctic Star Exploration Corp.  
Mailing address:  
Arctic Star Exploration Corp.  
#1100 – 1111 Melville Street  
Vancouver, BC, V6E 3V6  
Tel: 604.218.8772

[www.arcticstar.ca](http://www.arcticstar.ca)  
email: [info@arcticstar.ca](mailto:info@arcticstar.ca)  
Attention: Buddy Doyle

**Effective date of spill contingency plan: October 2024**

**Last revisions to spill contingency plan: October 2024**

## **Distribution List**

The plan and any recent revisions have been distributed to:

P. Power, President and CEO, Arctic Star Exploration Corp.

B. Doyle, Vice President Exploration, Arctic Star Exploration Corp.

D. Kelsch Consultant, Arctic Star Exploration Corp.

TBA Owner, Drilling Contractor,

TBA Project Manager, Arctic Star Exploration Corp.

TBA Project Geologist, Arctic Star Exploration Corp.

Board, Wek' èezhii Land and Water Board

## **Purpose and Scope**

The purpose of Arctic Star's Spill Contingency Plan is to provide an action plan for potential spill events that might occur at the Exploration activity sites. The Plan addresses and mitigates any unintentional release of petroleum products and other hazardous chemicals. It defines the responsibilities of key response personnel and outlines procedures to be taken to minimize the impact of a spill. The Plan has been prepared to provide to management and field staff the necessary information and tools to deal with a spill.

This Spill Contingency Plan is designed for early stage exploration activities. Such activities use fuels shipped and contained in sealed 205 liter drums and other hazardous chemicals in smaller containers such as 20 liter pails. This Plan provides procedures to cover spills which are likely to result from the leak or puncture of 1 drum per event or in the maximum scenario 2 ruptured drums which could be the result of accidental release while sling via helicopter or transportation incident via snowmachine.

Should the Exploration activities increase beyond early stage, a more robust Plan should be prepared taking into account any larger fuel storage facilities, additional hazardous chemicals and larger maximum potential spill scenarios.

## **Company Environmental Policy**

Arctic Star Exploration Corp. has been effectively working in the NWT for several decades. It is our policy to respect the land during operation periods, carefully abiding by land use regulations. Our goal is to leave a minimal footprint where we operate, continuing a harmonious relationship with and helping ensure a positive future for the land and all that thrives on it. This Contingency Plan has been developed as part of Arctic Star's commitment to the concept of sustainable development and the protection of the environment and human health. Arctic Star's environmental health and safety policy is to:

- Protect employees, the public and the environment
- Fully comply with all applicable legislation, regulations and authorizations
- Work proactively with federal, territorial and aboriginal governments, other relevant organizations, and the general public on all aspects of environmental protection
- Anticipate future spill control requirements and make provision for them
- Keep employees, contractors, Inspectors, Land and Water Boards, appropriate governments (Aboriginal, Federal and Territorial), and the public informed of any changes at the site or with project activities.

This Plan is distributed to Arctic Stars's site managers and site contractors working on all Arctic Star properties during on-site orientation sessions. Training is provided during orientation to ensure employees have an understanding of the procedure to follow in the event of a spill. Regular on-site safety meetings are held during program operation, and include reviews of this Plan and other safety/environmental issues. The Plan will remain posted in camp offices and in the camp dining area, and will be posted at any future camps. All employees and contractors are aware of the locations of the plan and are shown where spill kits are stored. They are aware of spill kit contents and are trained in using spill equipment and spill response. Arctic Star is committed to keeping personnel up to date on the latest technologies and spill response methods.

## **Property Location and Description**

Arctic Star Exploration Corp. has a small area of interest on and to the south of Hardy Lake approximately 40 km northeast of Diavik diamond mine and 40 km east of Ekati diamond mine, Northwest Territories. The primary mineral target will be diamond-bearing kimberlite. Historical exploration results have indicated a very good potential in the area of interest. The Diagrass camp will be used as a staging area for all work site activities.

## **Site Description**

The Arctic Star property (Diagrass) lies approximately 340 kilometers northeast of Yellowknife, NT. The existing temporary exploration camp site location is N64° 44' 03", W109° 45' 13" on a flat, low-lying esker in the southeast quadrant of the claim block. It is a remote area with no adjacent communities or inhabitants. Thus the only people immediately affected by a potential spill are employees or contractors. General location and surrounds can be found below in Figure 1.

A detailed sketch map of the site including the location of fuel storage areas, office, kitchen, sleepers, generator, helicopter pad and surrounding water bodies as well as direction of flow can be found below in Figure 2 and 3.

Fuels and sumps are located a minimum of 100 meters from the normal high water mark of any water course or water body. Supplies will be brought in on the Tibbitt – Contwoyto winter road which has historically travelled parallel to the western claim boundary and then traversed eastwards through the northwest corner. Supplies will alternatively be flown in via float plane in summer or ski equipped plane in the winter, both which will utilize a location on a lake near the camp with safe conditions for landing.



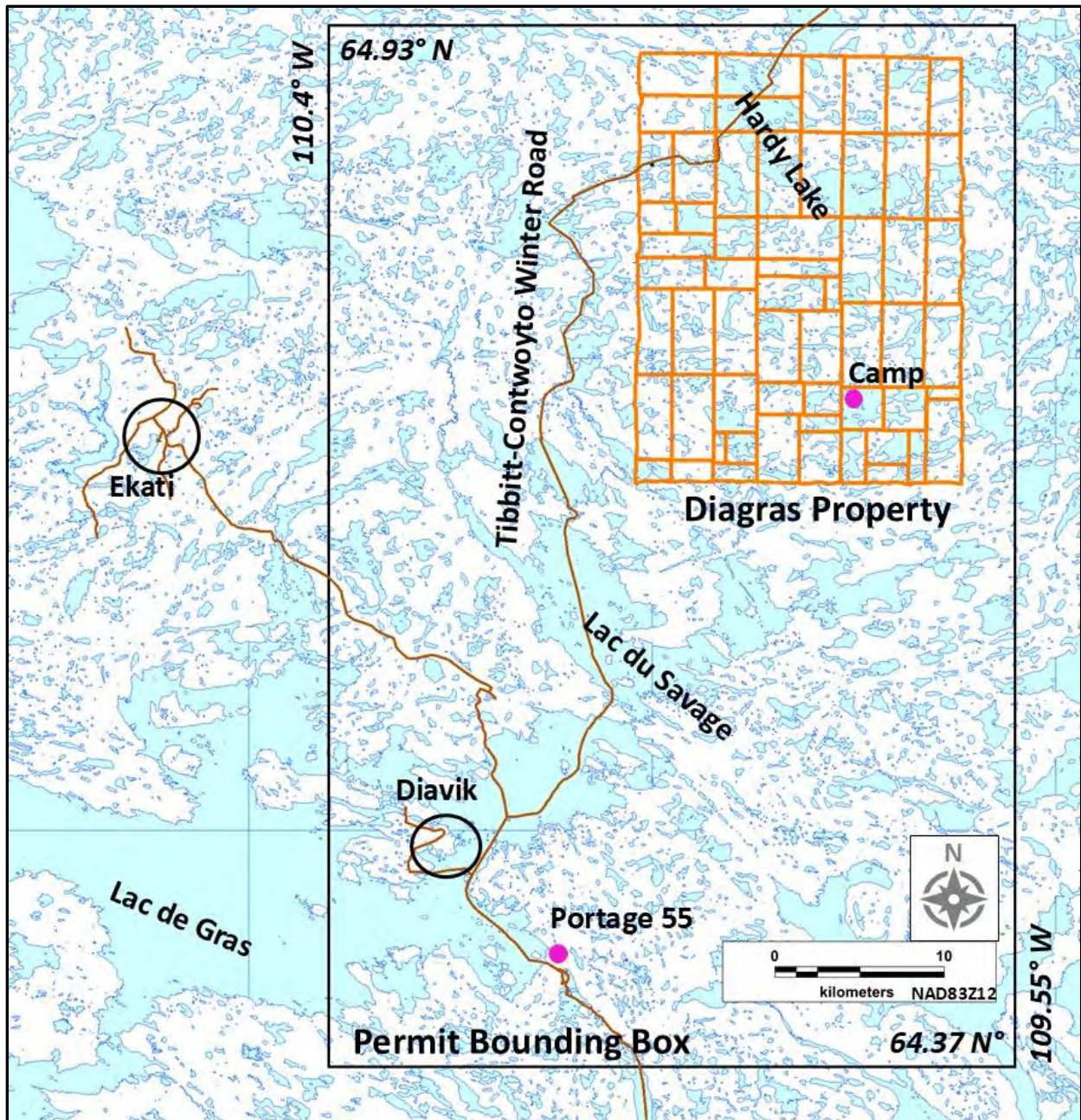


Figure 1: Site location map.

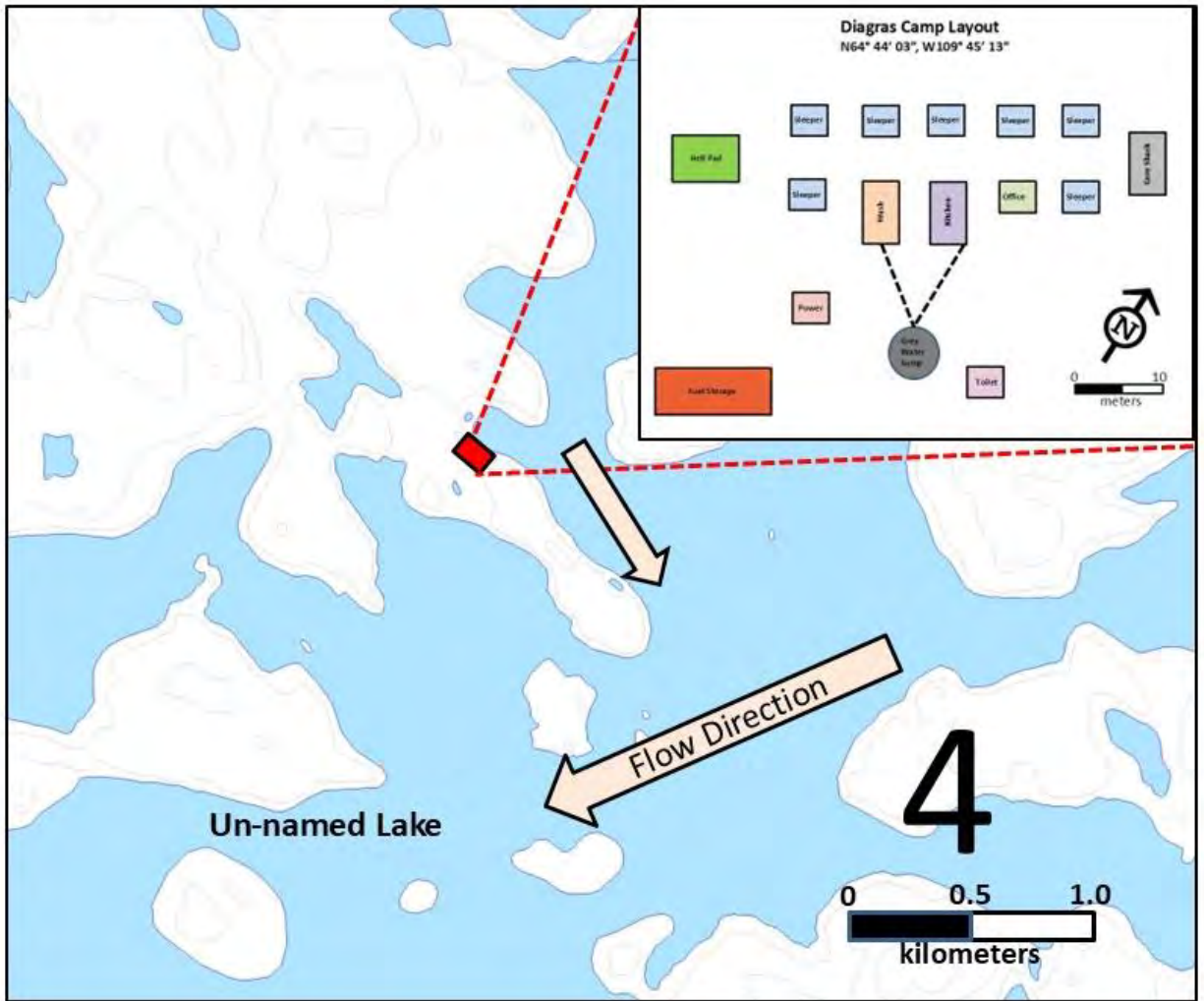


Figure 2: Detailed sketch of site plan.

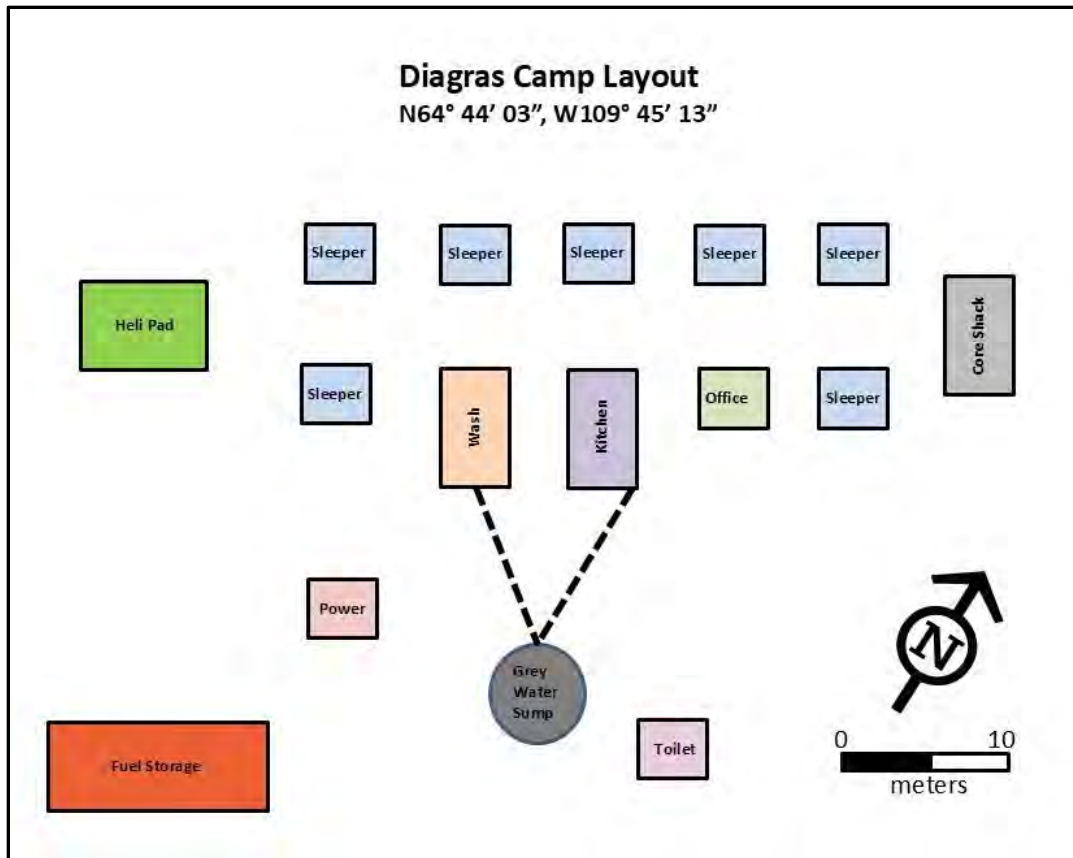


Figure 3: Detailed sketch of camp layout, fuel storage, grey water, incinerator (NAD83)

### List of hazardous materials on site and handling

All fuel is transported by air from Yellowknife via fixed wing aircraft or by truck via the winter road. Fuel will be stored in sealed 45 gallon (205 liter) drums that are clearly marked with the Company name in locations that are deemed suitable by GNWT Department of Lands Inspectors and comply with the LUP. Once delivered, the fuel is moved by helicopter using fuel slings or by snowmachine and toboggan. All fuel on site will remain in standard fuel drums, and is stored in designated areas appropriate for the re-fueling of aircraft, generating plant, snow machines and drills. It is anticipated that the total petroleum product requirements for the Project will not exceed 210 - 205L drums of combined diesel and gasoline and 200 - 205L drums of Jet fuel during the field season.

The fuel storage area near the helicopter pad is for storing all diesel, jet-fuel, gasoline and propane. Smaller amounts of other petroleum products and oils/lubricants are stored on-site at the camp in the dry storage building. Small quantities of diesel and jet fuel will be temporarily cached at active drill sites along with appropriate sized Spill Kits. The amount of diesel cached will be for immediate consumption requirements needed for 2 – 4 shifts, typically 2 – 4 drums. Jet fuel amounts cached will be for immediate consumption for a drill move and may contain 2 – 4 drums. All temporary caches will be progressively reclaimed. Drill site locations are not currently known.



Material Safety Data Sheets (MSDS) for all fuels and chemicals (Appendix C) are kept at camp site for reference, should they be required. Should any fuel products be required in other areas within the claim block area appropriate amendments to the Land Use Permit will be applied for and fuel products will be stored and handled at the specific site in accordance with applicable guidelines.

No bulk storage is being proposed at this time. The numbers of drums will vary as they are used and replaced.

Waste oil will be removed to Yellowknife for disposal at an approved disposal site. Empty Drums will be flown out on available backhauls.

Leaks or spills will most likely happen as a result of poor seals, mishandling of containers, accidental puncture of fuel lines and wildlife interactions. All fuel lines and connections are checked for leakage. Absorbent padding is secured around connections to minimize potential leaks.

All fuel transferring will be done using a small hand crank barrel pumps commonly referred to as a wobble pumps, or small electric pumps designed for transferring fuel from 205L barrels.

## Maximum Quantities of hazardous materials on site

**Table 1: List of hazardous materials stored on-site, type of storage container, the normal and maximum storage quantities, and storage locations**

Diesel Fuel <b>Diagras Camp Drill Site(s)</b>	205L drums 205L drums	200 drums (38,950 L)	Diesel is mobilized on winter road with supplemental fuel flown in on an as needed basis. Sleep tents, drill, generator, incinerator. Stored at camp. Fuel delivered to drill on a per hole basis.
Jet Fuel <b>Diagras Camp Drill Site(s)</b>	205L drums 205L drums	200 drums (41,000 L)	Jet fuel is mobilized on winter road with supplemental fuel flown in on an as needed basis. Helicopter use. Stored at camp. Several drums temporarily stored at drill for drill moves.
Gasoline <b>Diagras Camp Drill Site(s)</b>	205L drums 205L drums	10 drums (2,050 L)	Gasoline is mobilized on winter road with supplemental fuel flown in on an as needed basis. Snowmobiles, small equipment such as pumps and backup generators, as well as some drill equipment. Stored at camp.

Propane <b>Diagras Camp Drill Site(s)</b>	100 Lb. cylinders 100 Lb. cylinders	50 cylinders	Propane is mobilized on winter road with supplemental fuel flown in on an as needed basis. Kitchen appliances, portable heaters at drill, heat for waterline and in camp. Stored at camp.
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Only a few liters of cleaning and maintenance compounds (including household type cleaners, de-greasers, lubricating oils etc.) also known as household ‘hazardous materials’, are used on site, stored in area behind kitchen and/or generator shack storage space. The potential for spills of these materials is not considered to have significant ramifications to the environment.

Material Safety Data Sheets for each hazardous material are included in Appendices.

### **Existing Preventative Measures**

The Plan is designed so that a coordinated response to spills will occur, and any spill will be dealt with in a timely and efficient manner. All personnel handling fuel or chemicals shall make themselves familiar with the Plan and the Plan will be part of the induction process to new project personnel. Training is provided during orientation to ensure employees have an understanding of the procedure to follow in the event of a spill.

All fuel and hazardous materials are transported by air from Yellowknife via fixed wing aircraft or by truck via the winter road. Fuel is stored in sealed 45 gallon (205 liter) drums that are clearly marked with the Company name and contents. Other hazardous materials are typically transported in 5 gallon (20 liter) pails with contents clearly labeled.

When fuels and hazardous materials arrive at site the camp manager or other authorized person meets the shipment and coordinates the offloading and storage. Only properly trained personnel are to assist and PPE (personal protective equipment) must be worn at all times while engaged in the process. PPE consists of a minimum of hard hat, safety glasses, hard-toe boots, reflective vest and where materials are combustible flame retardant outerwear.

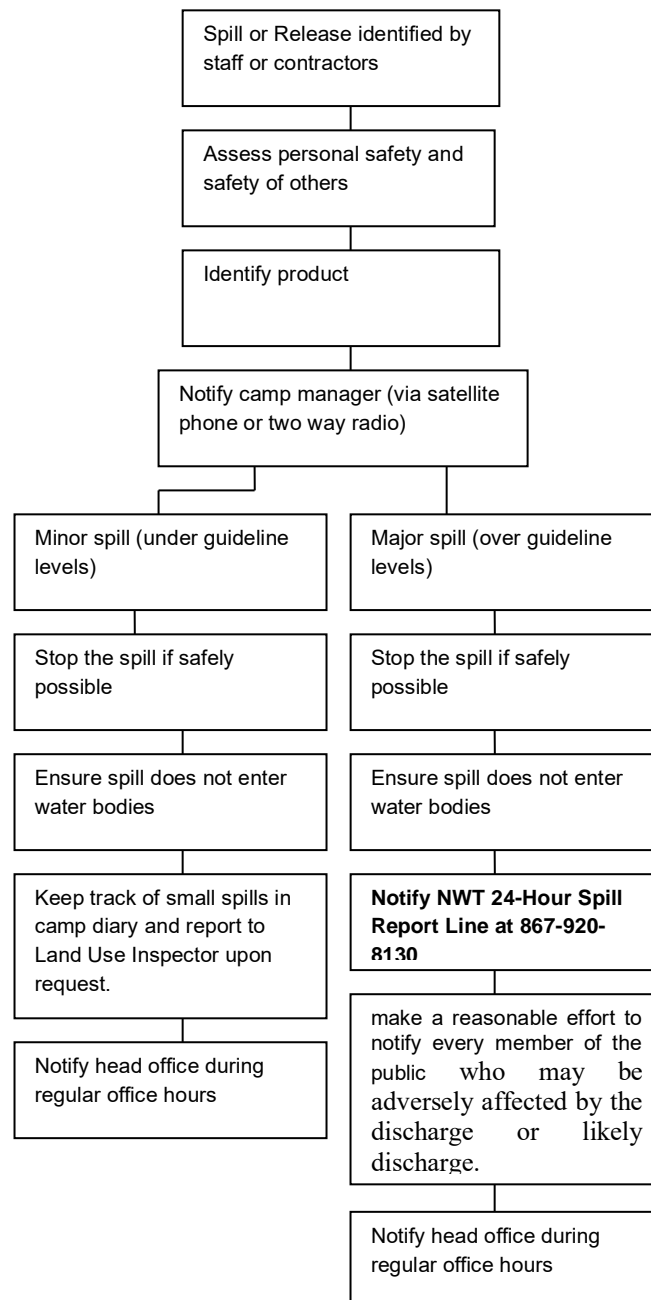
Offloading of hazardous materials shall never be performed without 2 or more personnel present.

Secondary containment measures shall be employed for diesel, jet fuel and gasoline drums stored at site and shall be placed in a berm that is lined with an impermeable liner capable of 110% containment. The drums shall be placed in the berm in such a way as to prevent damage to the liner. The camp manager or designated fuel monitor shall conduct daily visual inspections to check for leaks or damage to the fuel storage containers, as well as for stained or discoloured soils around the fuel storage areas and adjacent to motorized equipment. The fuel storage area can be found on Figures 2 and 3. Spill kits shall also be readily available and located at the fuel storage area and helicopter pad.

## Response Organization

### Reporting in the event of spill

If a spill of reportable size (see Appendix B3) has occurred, an NWT Spill Report needs to be filled out (see Appendix A). The information is available for the public to view upon request by contacting the NWT Spill Line or by viewing the GNWT Hazardous Materials Spills Database online at <https://www.gov.nt.ca/ecc/en/services/report-spill>



An immediately reportable spill is defined as a release of a substance that is likely to be an imminent environmental or human health hazard or meets or exceeds the volumes outlined in Appendix B-3. It must be reported to the NWT 24-Hour Spill Report Line at 867-920-8130. If there is any doubt that the quantity spilled exceeds reportable levels, the spill will be reported to the NWT 24-Hour Spill Report Line.

Personnel (On-Scene Coordinators) responsible for the Plan:

On-Site Project Manager: TBA (site supervisor) Telephone: - TBA

Alternative Project Managers: TBA

The responsibilities of the On-Scene Coordinators include the following:

- Assume complete authority over the spill scene and personnel involved.
- Activate the Contingency Plan.
- Evaluate the initial situation and assesses the extent of the spill.
- Report the spill to the 24-hour Spill Report Line at (867) 920-8130.
- Develop a mitigation plan for the spill
- The responsibility of the coordinator is to mobilize personnel and equipment to implement the cleanup.
- Provide liaison with Arctic Star management to keep them informed of cleanup activities.
- Obtain additional required resources not available on-site for spill response and cleanup.
- Document the cause of the spill and effectiveness of the cleanup effort, and implement the appropriate measures to prevent a recurrence of the spill.
- Prepare and submit follow-up documentation required by appropriate regulators.
- Ensure that the spill is cleaned up and all follow-up communication and reports are filed with the GNWT Department of Lands, North Slave Regional Office.

## Action Plan

### Potential sources of petroleum product spills could involve the following:

1. Leaking or ruptured fuel drums.
2. Fuel transfer operations between storage drums and mobile equipment including aircraft. This could include broken supply pipes, hoses, and associated valves during fuel transfer operations.
3. Aircraft, snow-vehicles or equipment involved in accidents.
4. Leaks and drips from machinery, pumps, motors, and other equipment.

The potential for spills to occur directly on a watercourse is low at the project site because fuel storage and transfer points are located away from watercourses. However, if a spill occurred during the winter on lake ice, it will be contained and cleaned up without contaminating the under – ice lake waters.

The camp manager or designated fuel monitor conducts inspections to check for leaks or damage to the fuel storage containers, tight seals on lids and caps.

Table 2 lists potential discharge events with associated discharge volumes and flow direction for the primary hazardous materials stored on site. The most likely discharge volume is indicated and the spill cleanup procedures will focus on spills of this quantity. A worst case scenario is also presented. Specific discharge rates are not indicated for each fuel type as these would vary from a few minutes to several hours, based on the source of leak or puncture.

**Table 2: List of hazardous materials, potential discharge events, potential discharge volumes (worst case scenario in brackets) and direction of potential discharge**

<b>Material (sources)</b>	<b>Potential Discharge Event</b>	<b>Discharge Volume (worst case)</b>	<b>Direction of Potential Discharge</b>
Diesel Fuel (drill rig, oil stoves, storage area)	<ol style="list-style-type: none"> <li>1. Over pumping of fuel from drum into drill rig.</li> <li>2. Leaking from drill rig.</li> <li>3. Minor leaking fuel drum in/outside fuel storage area.</li> <li>4. Large puncture,</li> </ol>	Likely under 205 L/1 drum (max 41,000 L/ 200 drums)	<p>Toward stream or lake from drill site or fuel storage area near drill site.</p> <p>In camp on flat ground, from fuel storage area or communal buildings with potential underground seepage to Un-named camp Lake.</p>



	<p>fast leaking drum in/outside fuel storage area.</p> <ol style="list-style-type: none"> <li>5. From drum connection to stoves in communal buildings.</li> <li>6. All drums punctured and leaking at once (very unlikely).</li> </ol>		
<p>Jet Fuel (twin otter, helicopter, storage area)</p>	<ol style="list-style-type: none"> <li>1. Over filling of aircraft.</li> <li>2. Leak from drum or hose while filling aircraft.</li> <li>3. Minor leaking fuel drum in/out side fuel storage area.</li> <li>4. Large puncture, fast leaking drum in/outside fuel storage area.</li> <li>5. All drums punctured and leaking at once (very unlikely).</li> </ol>	<p>Likely under 205 L/1 drum (max 41,000 L/ 200 drums)</p>	<p>In camp on flat ground, from fuel storage area or helicopter pad with potential underground seepage to Un-named camp Lake.</p> <p>In Un-named camp Lake while refuelling twin otter.</p>
<p>Gasoline (snow machines, boat, storage area )</p>	<ol style="list-style-type: none"> <li>1. Over filling of snow machines or boat (small spill)</li> <li>2. Leak from drum or hose while filing boat or snow machines.</li> <li>3. Minor leaking fuel drum in/outside fuel storage area.</li> <li>4. Large puncture, fast leaking drum in/outside fuel storage area.</li> <li>5. All drums</li> </ol>	<p>Likely under 205 L/1 drum (max 2,050 L/ 10 drums)</p>	<p>In camp on flat ground, from fuel storage area or refueling point at fuel storage area with potential underground seepage to Un-named camp Lake.</p>

	punctured and leaking at once (very unlikely)		
Propane (kitchen stove and fridge, storage area)	<ol style="list-style-type: none"> <li>1. Leak while connected to kitchen stove or fridge.</li> <li>2. Minor leaking cylinder in or outside fuel storage area.</li> <li>3. Large puncture, fast leaking drum in/outside fuel storage area.</li> <li>4. All drums punctured and leaking at once (very unlikely).</li> </ol>	Likely under 45 kg/ 1 cylinder (max 900 kg/ 20 cylinders)	In camp on flat ground, from fuel storage area or communal buildings with potential underground seepage to Un-named camp Lake.

### Potential Environmental Impacts of Spill

Overall for all hazardous materials discussed below, impacts are lower during winter as snow is a natural sorbent and ice forms a barrier limiting or eliminating soil or water contamination, thus spills can be more readily recovered when identified and reported.

#### Gasoline

Environmental impacts: Gasoline may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Gasoline is quick to volatilize. Runoff into water bodies must be avoided.

Worst case scenario: All fuel drums were punctured or open simultaneously and contents seeped into surrounding soil and water bodies. This could cause illness or death to aquatic life and indirectly affect wildlife feeding from the land and water.

#### Diesel Fuel

Environmental impacts: Diesel may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Diesel burns slowly and thus risk to the environment is reduced during recovery as burn can be more readily contained compared with volatile fuels. Runoff into water bodies must be avoided.

Worst case scenario: All fuel drums were punctured or open simultaneously and contents seeped into surrounding soil and water bodies. This could cause illness or death to aquatic life and indirectly affect wildlife feeding from the land and water.

### **Jet Fuel**

Environmental impacts: Jet B fuel may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Jet B fuel volatilizes relatively quickly. Runoff into water bodies must be avoided.

Worst case scenario: All fuel drums were punctured or open simultaneously and contents seeped into surrounding soil and water bodies. This could cause illness or death to aquatic life and indirectly affect wildlife feeding from the land and water.

### **Propane**

Environmental impacts: Propane may be harmful to wildlife and the surrounding environment. It has the potential to accumulate in the environment. Propane is extremely volatile and is the most flammable material stored on site, thus immediate impacts to the surrounding environment are a concern.

Worst case scenario: All cylinders were punctured or failed simultaneously and contents leaked into the surrounding environment and ignited leading to an explosion. This could cause serious environmental impacts in the immediate surroundings. Safety during emergency response to a propane spill is of the utmost concern.

### **Waste Oil and Miscellaneous Oils/Grease**

Environmental impacts: Waste oils may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Runoff into water bodies must be avoided.

Worst case scenario: All storage containers were punctured or open simultaneously and contents seeped into surrounding soil and water bodies. This could cause illness or death to aquatic life and indirectly affect wildlife feeding from the land and water.

## **Procedures**

### **Spill Reporting Procedures**

Report spill immediately to camp manager, who will determine if spill is to be reported to the NWT 24-Hour Spill Line at 867-920-8130.

The spill kit, as well as the office and camp manager, will have copies of the NWT Spill Report form to be filled out (see Appendix B-2). Fill out and fax or email the Spill Report to the staff of the NWT 24-Hour Spill Line. Also fax or email the report to the head office.

NWT 24-Hour Spill Line  
Tel: 867-920-8130

NWT 24-Hour Spill Line  
Fax: 867-873-6924

NWT 24-Hour Spill Line  
Email: [spills@gov.nt.ca](mailto:spills@gov.nt.ca)

Mackenzie Valley Land and Water Board  
Tel: (867-669-0506)

Head office, Arctic Star Exploration Corp.  
Tel: 604.218.8772

The camp manager is also responsible under the **ENVIRONMENTAL PROTECTION ACT R.S.N.W.T. 1988,c.E-7, Section 5.1(c)** to “*make a reasonable effort to notify every member of the public who may be adversely affected by the discharge or likely discharge*”.

Where a spill occurs on land the camp manager shall make a reasonable effort to have the surrounding areas affected or potentially affected investigated and notify any member of the public occupying such area.

Where a spill occurs on or near water the camp manager shall make a reasonable effort to have the immediate water body and downstream water courses affected or potentially affected investigated and notify any member of the public occupying such areas.

## **Procedures for Containing and Controlling the Spill (land, water, snow, etc.)**

### **1) Spills on Land**

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

#### Dykes

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

#### Trenches

Trenches can be dug out to contain spills as long as the top layer of soil is thawed. Shovels pick axes or a loader can be used depending on the size of the trench required. It is recommended

that the trench be dug to the bedrock or permafrost, which will then provide containment layer for the spilled fuel. Fuel can then be recovered using a pump or sorbent materials.

## **2) Spills on Water**

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

### Booms

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

### Weirs

Weirs can be used to contain spills in streams and to prevent further migration downstream. Plywood or other materials found on site can be placed into and across the width of the stream, such that water can still flow under the weir. Spilled fuel will float on the water surface and be contained at the foot of the weir. It can then be removed using sorbents, booms or pumps and placed into barrels or plastic bags.

## **3) Spills on Ice**

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

### Dykes

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

### Trenches

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

### Burning

Burning should only be considered if other approaches are not feasible, and is only to be undertaken with the permission of the GNWT Department of Lands Inspector.

## **4) Spills on Snow**

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

### Dykes

Dykes can be used to contain fuel spills on snow. By compacting snow down slope from the spill, and mounding it to form a dyke, a barrier or berm is created thus helping to contain the spill. The collected fuel/snow mixture can then be shoveled into barrels or bags, or collected with sorbent materials.

## **5) Wildlife**

If possible without risk to persons all wildlife and birdlife should be discouraged from entering the spill area. A presence should be maintained in the spill area at all times until the spill is completely cleaned up. Those present should discourage wildlife and birdlife from entering the spill area by making their presence known (i.e. make loud noise). If the spill occurs in water that is too deep for a person to wade into, a boat should be made available to discourage marine birds from entering the spill zone.

If any birds or wildlife do enter the spill area and are affected by the contaminant, all efforts should be made to track and monitor the wildlife, and the site supervisor should contact Environment Canada for information on how to proceed with the species affected.

## Resource Inventory

### i) On-site resources

Spill kits of appropriate size will be located at the camp site, fuel cache, and drill sites. There will be one kit located at each drill site during drilling operations. All kits are inspected on a monthly basis to ensure they are fully equipped and usable.

Large Kits contain:

<ul style="list-style-type: none"><li>-4 socks (5" x 10')</li><li>-100 pads (17" x 19" x DW)</li><li>-1 drain cover (36" x 36" x 1/16")</li><li>-1lb. premixed plugging compound</li><li>-1 caution tape</li><li>-2 pairs nitrile gloves,</li><li>-2 pairs safety goggles</li><li>-2 protective coveralls</li><li>-10 disposal bags (24" x 48")</li><li>-1 instruction book</li></ul>	<p>Small Kit contains:</p> <ul style="list-style-type: none"><li>-1 sock (5" x 10')</li><li>-50 pads (17" x 19" x DW)</li><li>-500 g premixed plugging compound</li><li>-1 pair latex gloves</li><li>-1 disposal bag</li></ul>
---	--

Small Kit contains:

### ii) Off-site Resources

All the contacts listed below could reach the site in 2 hours at a minimum. However, realistically government officials would not be able to reach the site until the next business day, depending on the severity of the spill.

NWT 24-Hour spill line  
867-920-8130

GNWT – Department of Lands Inspector  
867-767-9188 or (c) 867-446-0769

Environment Canada (Emergency) Yellowknife  
867-669-4730

National Environmental Emergencies Center (NEEC)  
1-866-283-2333 add this agency and number

GNWT Environmental Protection Division  
867-873-7654

GNWT Environmental Health Office  
867-669-8979

RCMP (Yellowknife)  
867-669-1111

Medivac (Yellowknife)  
867-669-4115

Air Tindi (Yellowknife)  
867-669-8218 or 669-8200

## Training Program

The training program applies to all personnel entering the site regardless of duration or work position. Certain positions will require more specific detailed training.

- all individuals entering the site are required to participate in an orientation session
- an overview of the plan is provided by the camp manager or authorized designate leading the orientation session
- a copy of the plan is made available to all personnel. Personnel are to make themselves aware of the hazards of the materials stored on site.
- the locations of all spill kits are shown including map orientation
- senior staff with which to report all spills to are identified in person
- supervisor is required to have first aid training and while drilling operations are underway a supervisory certificate
- specific training sessions, including mock spill exercises, are scheduled for individuals directly involved in handling hazardous materials to ensure they know all steps to be undertaken in handling these materials, as well as the steps involved in the event of a spill, including the proper use of spill kits





All personnel handling fuel or chemicals shall make themselves familiar with the Plan and the Plan will be part of the induction process to new project personnel. Training is provided during orientation to ensure employees have an understanding of the procedure to follow in the event of a spill.

Records of all orientation and training sessions shall be kept on site with a copy forwarded to the Company's office. Records will include:

- date of orientation / training
- individuals involved
- purpose of training, specific topics covered
- schedule of follow up or next training session
- sign off sheet for each individual listing the above points and acknowledging full understanding of orientation / training or stating requirement for additional information or training



# Appendix A: NWT Spill Report Form

<b>NT-NU SPILL REPORT</b>		   		
<b>OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS</b>		<b>NT-NU 24-HOUR SPILL REPORT LINE</b> Tel: (867) 920-8130 • Email: spills@gov.nt.ca		
A	Report Date: <input type="text"/> / <input type="text"/> / <input type="text"/>	Report Time: <input type="text"/>	<input type="checkbox"/> Original Spill Report <b>OR</b> <input type="checkbox"/> Update # <input type="text"/> to the Original Spill Report	
B	Occurrence Date: <input type="text"/> / <input type="text"/> / <input type="text"/>	Occurrence Time: <input type="text"/>	Report Number: <input type="text"/>	
C	Land Use Permit Number (if applicable): <input type="text"/>	Water Licence Number (if applicable): <input type="text"/>		
D	Geographic Place Name or Distance and Direction from the Named Location: <input type="text"/>		Region: <input type="checkbox"/> NT <input type="checkbox"/> Nunavut <input type="checkbox"/> Trans-boundary or Ocean	
E	Latitude: <input type="text"/> Degrees <input type="text"/> Minutes <input type="text"/> Seconds	Longitude: <input type="text"/> Degrees <input type="text"/> Minutes <input type="text"/> Seconds		
F	Responsible Party or Vessel Name: <input type="text"/>	Responsible Party Address or Office Location: <input type="text"/>		
G	Any Contractor Involved: <input type="text"/>	Contractor Address or Office Location: <input type="text"/>		
H	Product Spilled: <input type="checkbox"/> Potential Spill	Quantity in Litres, Kilograms or Cubic Metres: <input type="text"/>	U.N. Number: <input type="text"/>	
I	Spill Source: <input type="text"/>	Spill Cause: <input type="text"/>	Area of Contamination in Square Metres: <input type="text"/>	
J	Factors Affecting Spill or Recovery: <input type="text"/>	Describe Any Assistance Required: <input type="text"/>	Hazards to Persons, Property or Environment: <input type="text"/>	
K	Summary of the spill incident and efforts / description of the incident:  <input type="text"/>			
L	Reported to Spill Line by: <input type="text"/>	Position: <input type="text"/>	Employer: <input type="text"/>	
M	Any Alternate Contact: <input type="text"/>	Position: <input type="text"/>	Employer: <input type="text"/>	
<b>REPORT LINE USE ONLY</b>				
N	Received at Spill Line by: <input type="text"/>	Position: <input type="text"/>	Employer: <input type="text"/>	Location Called: <input type="text"/>
Lead Agency: <input type="checkbox"/> EC <input type="checkbox"/> CCG/TCMSS <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> CIRNAC <input type="checkbox"/> CER <input type="checkbox"/> Other: <input type="text"/>			File Status: <input type="checkbox"/> Open <input type="checkbox"/> Closed	
Agency:	Contact Name:	Contact Time:	Remarks:	
Lead Agency:	<input type="text"/>	<input type="text"/>	<input type="text"/>	
First Support Agency:	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Second Support Agency:	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Third Support Agency:	<input type="text"/>	<input type="text"/>	<input type="text"/>	

## Appendix B: Reportable Spill Quantities

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

**Note:** l. = litre; kg = kilogram; PCB = Polychlorinated Biphenyls; ppm = parts per million

## **Appendix C: Material Safety Data Sheets**

# Material Safety Data Sheet



JET A/A-1 AVIATION TURBINE FUEL



## 1. Product and company identification

**Product name** : JET A/A-1 AVIATION TURBINE FUEL  
**Synonym** : Jet A-1; Jet A-1-DI; Aviation Turbine Kerosene (ATK); JP-8; NATO F-34; Jet F-34; Turbine Fuel, Aviation, Kerosene Type (CAN/CGSB-3.32)  
**Code** : W213, SAP: 149  
**Material uses** : Used as aviation turbine fuel. May contain a fuel system icing inhibitor. In the arctic, Jet A-1 may also be used as diesel fuel (if it contains a lubricity additive) and heating oil.  
**Manufacturer** : PETRO-CANADA  
P.O. Box 2844  
150 – 6th Avenue South-West  
Calgary, Alberta  
T2P 3E3  
**In case of emergency** : Petro-Canada: 403-296-3000  
Canutec Transportation: 613-996-6666  
Poison Control Centre: Consult local telephone directory for emergency number(s).

## 2. Hazards identification

**Physical state** : Clear liquid.  
**Odour** : Kerosene-like.  
**WHMIS (Canada)** :    
Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).  
Class D-2A: Material causing other toxic effects (Very toxic).  
**The WHMIS classification of Jet A/A-1 is B3.**  
**The WHMIS classification of Jet A/A-1-DI, JP-8, Jet F-34 and NATO F-34, which all contain FSII (Diethylene Glycol Monomethyl Ether), is B3, D2A.**  
**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
**Emergency overview** : CAUTION!  
COMBUSTIBLE LIQUID AND VAPOUR. MAY CAUSE EYE AND SKIN IRRITATION. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA.  
Combustible liquid. Slightly irritating to the eyes and skin. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapour or mist. Avoid contact with eyes, skin and clothing. Contains material which may cause birth defects, based on animal data. Avoid exposure during pregnancy. Use only with adequate ventilation. Wash thoroughly after handling.  
**Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.  
**Potential acute health effects**  
**Inhalation** : Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.  
**Ingestion** : Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract.  
**Skin** : Slightly irritating to the skin.  
**Eyes** : Slightly irritating to the eyes.  
**Potential chronic health effects**  
**Chronic effects** : No known significant effects or critical hazards.

## 2. Hazards identification

- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : Contains material which may cause birth defects, based on animal data.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.
- Medical conditions aggravated by over-exposure** : Repeated skin exposure can produce local skin destruction or dermatitis.

See toxicological information (Section 11)

## 3. Composition/information on ingredients

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

\*Aromatic content is 25% maximum (benzene: nil).

\*\*Please note that Jet A-1-DI, JP-8, Jet F-34 and NATO F-34 all contain Fuel System Icing Inhibitor.

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

## 4. First-aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## 5. Fire-fighting measures

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

### Extinguishing media

- Suitable** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

## 5 . Fire-fighting measures

- Products of combustion** : Carbon oxides (CO, 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.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite. May accumulate in confined spaces.
- Special remarks on explosion hazards** : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire.

## 6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods for cleaning up

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

## 7 . Handling and storage

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

## 7. Handling and storage

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

## 8. Exposure controls/personal protection

Ingredient	Exposure limits
Kerosene	<b>ACGIH TLV (United States). Absorbed through skin.</b> TWA: 200 mg/m <sup>3</sup> 8 hour(s).

### Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal protection

- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.  
Recommended: polyvinyl alcohol (PVA), Viton®. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

## 8 . Exposure controls/personal protection

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

## 9 . Physical and chemical properties

**Physical state** : Clear liquid.

**Flash point** : Closed cup:  $\geq 38^{\circ}\text{C}$  ( $\geq 100.4^{\circ}\text{F}$ ) [Tag. Closed Cup]

**Auto-ignition temperature** :  $210^{\circ}\text{C}$  ( $410^{\circ}\text{F}$ )

**Flammable limits** : Lower: 0.7%  
Upper: 5%

**Colour** : Clear and colourless.

**Odour** : Kerosene-like.

**Odour threshold** : Not available.

**pH** : Not available.

**Boiling/condensation point** :  $140$  to  $300^{\circ}\text{C}$  ( $284$  to  $572^{\circ}\text{F}$ )

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

**Relative density** : 0.775 to 0.84 (Water=1)

**Vapour pressure** : 0.7 kPa (5.25 mm Hg) @  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ ).

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

**Volatility** : Volatile.

**Evaporation rate** : Not available.

**Viscosity** : 1.0 - 1.9 cSt @  $40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ )

**Pour point** :  $< -51^{\circ}\text{C}$  ( $< -60^{\circ}\text{F}$ )

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

## 10 . Stability and reactivity

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

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

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

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

## 11 . Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Kerosene	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	>5000 mg/m <sup>3</sup>	4 hours

**Conclusion/Summary** : Not available.

### Chronic toxicity

**Conclusion/Summary** : Not available.

### Irritation/Corrosion

**Conclusion/Summary** : Not available.

### Sensitiser

**Conclusion/Summary** : Not available.

### Carcinogenicity



## 11 . Toxicological information

Conclusion/Summary : Not available.

### Classification

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

### Mutagenicity

Conclusion/Summary : Not available.

### Teratogenicity

Conclusion/Summary : Not available.

### Reproductive toxicity

Conclusion/Summary : Not available.

## 12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

### Aquatic ecotoxicity

Conclusion/Summary : Not available.

### Biodegradability

Conclusion/Summary : Not available.


## 13 . Disposal considerations

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

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

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

## 14 . Transport information

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

PG\* : Packing group

## 15 . Regulatory information

### United States

HCS Classification : Combustible liquid

### Canada

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

The WHMIS classification of Jet A/A-1 is B3.

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

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

### International regulations

Canada inventory : All components are listed or exempted.

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

Europe inventory : All components are listed or exempted.

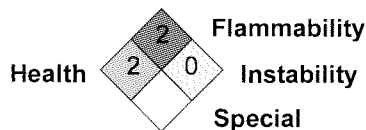
## 16 . Other information

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

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

Health	*	2
Flammability		2
Physical hazards		0
Personal protection		H

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



References : Available upon request.  
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☑ Indicates information that has changed from previously issued version.

For Copy of (M)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: (905) 804-4752








### Notice to reader

## 16 . Other information

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

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



WHMIS (Pictograms)	WHMIS (Classification)	Protective Clothing	TDG (pictograms)
 	<b>B-2, D-2A, D-2B</b>	   	

**Section 1. Chemical Product and Company Identification**

<b>Product Name</b>	<b>JET B AVIATION TURBINE FUEL</b>	<b>Code</b>	W219 SAP: 150, 151, 152
<b>Synonym</b>	Jet B; Jet B DI; JP-4; Jet F-40; NATO F-40; Turbine Fuel, Aviation, Wide Cut Type (CAN/CGSB-3.22).	<b>Validated on</b>	12/3/2001.
<b>Manufacturer</b>	PETRO-CANADA P.O. Box 2844 Calgary, Alberta T2P 3E3	<b>In case of Emergency</b>	Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).
<b>Material Uses</b>	Used as aviation turbine fuel. May contain a fuel system icing inhibitor.		

**Section 2. Composition and Information on Ingredients**

Name	CAS #	% (V/V)	Exposure Limits (ACGIH)		
			TLV-TWA(8 h)	STEL	CEILING
1) Complex mixture of petroleum hydrocarbons (C6-C14).	64741-41-9	>99	Not established	Not established	Not established
2) Benzene	71-43-2	<0.5	0.5 ppm	2.5 ppm	Not established
3) Fuel System Icing Inhibitor (FSII) (if added*): Diethylene Glycol Monomethyl Ether	111-77-3	≤0.15	Not established	Not established	Not established
4) Anti-static, antioxidant and metal deactivator additives.	Not applicable	<0.1	Not applicable	Not applicable	Not applicable

\* Please note that Jet B DI, JP-4, Jet F-40 and NATO F-40 all contain Fuel System Icing Inhibitor (FSII).

<b>Manufacturer Recommendation</b>	Not applicable
<b>Other Exposure Limits</b>	Consult local, state, provincial or territory authorities for acceptable exposure limits.

**Section 3. Hazards Identification.**

<b>Potential Health Effects</b>	Skin and eye contact can cause irritation. Inhalation of vapours can cause irritation of the respiratory tract and CNS depression with symptoms of nausea, headaches, vomiting, dizziness, fatigue, light-headedness, reduced coordination, unconsciousness and possibly death. Aspiration into the lungs may produce potentially fatal chemical pneumonitis (fluid in the lungs), severe lung damage, or respiratory failure. This product contains a cancer causing agent. For more information, refer to Section 11.
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**Section 4. First Aid Measures**

<b>Eye Contact</b>	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention.
<b>Skin Contact</b>	Remove contaminated clothing - launder before reuse. Wash gently and thoroughly the contaminated skin with running water and non-abrasive soap. Seek medical attention.
<b>Inhalation</b>	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.
<b>Ingestion</b>	DO NOT induce vomiting because of danger of aspirating liquid into lungs. Seek medical attention.
<b>Note to Physician</b>	Not available

**Section 5. Fire-fighting Measures**

<b>Flammability</b>	Flammable liquid (NFPA).	<b>Flammable Limits</b>	LOWER: 1.3% UPPER: 8% (NFPA)
<b>Flash Points</b>	CLOSED CUP: -31°C (-24°F) (NFPA)	<b>Auto-Ignition Temperature</b>	240°C (464°F) (NFPA)
<b>Fire Hazards in Presence of Various Substances</b>	Flammable in presence of open flames, sparks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite. May accumulate in confined spaces.	<b>Explosion Hazards in Presence of Various Substances</b>	Do not cut, weld, heat, drill or pressurize empty container. Containers may explode in heat of fire.
<b>Products of Combustion</b>	Carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), sulphur oxides (SO <sub>x</sub> ), aldehydes, ketones, smoke and irritating vapours as products of incomplete combustion.		

<b>Fire Fighting Media and Instructions</b>	NAERG96, GUIDE 128, Flammable liquids (Non-polar/Water-immiscible). CAUTION: This product has a very low flash point: Use of water spray when fighting fire may be inefficient.
	If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions.
	SMALL FIRES: Dry chemical, CO2, water spray or regular foam. LARGE FIRES: Water spray, fog or regular foam. Do not use straight streams. Move containers from fire area if you can do it without risk. Fires Involving Tanks or Car/Trailer Loads: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
	Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting devices or any discolouration of tank. ALWAYS stay away from the ends of tanks. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

### Section 6. Accidental Release Measures

<b>Material Release or Spill</b>	NAERG96, GUIDE 128, Flammable Liquids (Non-polar/ Water-immiscible). ELIMINATE ALL IGNITION SOURCES. Avoid contact. Stop leak if without risk. Contain spill. Absorb with inert absorbents, dry clay, or diatomaceous earth. Avoid inhaling dust of diatomaceous earth for it may contain silica in very fine particle size, making this a potential respiratory hazard. Place used absorbent in closed metal containers for later disposal or burn absorbent in a suitable combustion chamber. DO NOT FLUSH TO SEWERS, STREAMS OR OTHER BODIES OF WATER. Check with applicable jurisdiction for specific disposal requirements of spilled material and empty containers. Notify the appropriate authorities immediately.
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### Section 7. Handling and Storage

<b>Handling</b>	Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk. DO NOT reuse empty containers without commercial cleaning or reconditioning. Ground/bond line and equipment during pumping or transfer to avoid accumulation of static charge. DO NOT ingest. Do not breathe gas/vapour/spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately. Avoid contact with skin and eyes. Practice good personal hygiene. Wash hands after handling and before eating. Launder work clothes frequently. Discard saturated leather goods.
<b>Storage</b>	Store in tightly closed containers in cool, dry, isolated, well-ventilated area, and away from incompatibles. Ground all equipment containing material. Keep away from direct sunlight.

### Section 8. 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 - <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 9. Physical and Chemical Properties

<b>Physical State and Appearance</b>	Clear liquid.	<b>Viscosity</b>	Not available (similar to gasoline)
<b>Colour</b>	Clear and colourless.	<b>Pour Point</b>	Freezing Point: <-51°C (<-60°F) for Jet B/Jet B DI; <-58°C (<-72°F) for Jet Fuel F-40.
<b>Odour</b>	Gasoline like.	<b>Softening Point</b>	Not applicable.
<b>Odour Threshold</b>	Not available	<b>Dropping Point</b>	Not applicable.
<b>Boiling Point</b>	50 to 270°C (122 to 518°F)	<b>Penetration</b>	Not applicable.
<b>Density</b>	0.75 to 0.80 kg/L @ 15°C (59°F).	<b>Oil / Water Dist. Coefficient</b>	Not available
<b>Vapour Density</b>	3.5 (Air = 1)	<b>Ionicity (in water)</b>	Not available
<b>Vapour Pressure</b>	21 kPa (158 mmHg) @ 37.8°C (100°F).	<b>Dispersion Properties</b>	Not available
<b>Volatility</b>	Volatile.	<b>Solubility</b>	Insoluble in water. Partially miscible in some alcohols. Miscible in other petroleum solvents.

**Section 10. Stability and Reactivity**

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

**Section 11. Toxicological Information**

<b>Routes of Entry</b>	Skin contact, eye contact, inhalation and ingestion.		
<b>Acute Lethality</b>	<p><b>Based on toxicity of similar product.</b>          Acute oral toxicity (LD50): &gt;20000 mg/kg (rat).          Acute dermal toxicity (LD50): &gt;5000 mg/kg (rabbit).          Acute inhalation toxicity (LC50): &gt;5000 mg/m<sup>3</sup>/4h (rat).</p> <p><b>Benzene</b>          Acute oral toxicity (LD50): 930 mg/kg (rat).          Acute dermal toxicity (LD50): &gt;9400 mg/kg (rabbit).          Acute inhalation toxicity (LC50): 13200 ppm/4h (rat).</p> <p><b>Diethylene Glycol Monomethyl Ether</b>          Acute oral toxicity (LD50): 4140-5180 mg/kg (rat).          Acute dermal toxicity (LD50): &gt;2000 mg/kg (rabbit).          Acute inhalation toxicity (LC50): &gt;50000 mg/m<sup>3</sup>/4h (rat).</p>		
<b>Chronic or Other Toxic Effects</b>			
Dermal Route:	Skin contact can cause irritation.		
Inhalation Route:	Inhalation of vapours can cause irritation of the respiratory tract and CNS depression with symptoms of nausea, headaches, vomiting, dizziness, fatigue, light-headedness, reduced coordination, unconsciousness and possibly death.		
Oral Route:	Aspiration into the lungs may produce potentially fatal chemical pneumonitis (fluid in the lungs), severe lung damage, or respiratory failure.		
Eye Irritation/Inflammation:	Eye contact can cause irritation.		
Immunotoxicity:	Not available		
Skin Sensitization:	This product is not expected to be a skin sensitizer, based on the available data and the known hazards of the components.		
Respiratory Tract Sensitization:	This product is not expected to be a respiratory tract sensitizer, based on the available data and the known hazards of the components.		
Mutagenic:	Benzene is tumorigenic by RTECS criteria.		
Reproductive Toxicity:	This product is not expected to be a reproductive hazard, based on the available data and the known hazards of the components.		
Teratogenicity/Embryotoxicity:	Fetotoxicity, embryotoxicity and/or teratogenicity have been observed in rats or rabbits following oral or dermal administration, in the absence of maternal toxicity. [Diethylene Glycol Monomethyl Ether]		
Carcinogenicity (ACGIH):	ACGIH A1: confirmed human carcinogen. [Benzene]		
Carcinogenicity (IARC):	IARC Group 1: carcinogenic to Humans. [Benzene]		
Carcinogenicity (NTP):	NTP Group 1: known to be a carcinogen. [Benzene]		
Carcinogenicity (IRIS):	Not available		
Carcinogenicity (OSHA):	Benzene is an OSHA known carcinogen.		
<b>Other Considerations</b>	No additional remark.		

**Section 12. 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 13. Disposal Considerations**

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

**Section 14. Transport Information**

<b>TDG Classification</b>	Currently: Fuel, aviation, turbine engine, 3, UN1863, PGII As of August 15, 2002: FUEL, AVIATION, TURBINE ENGINE, 3, UN1863, PGII	<b>Special Provisions for Transport</b>	Not applicable.
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**Section 15. Regulatory Information**

**Other Regulations** This product is acceptable for use under the provisions of WHMIS-CPR. All components of this formulation are listed on the CEPA-DSL (Domestic Substances List).

All components of this formulation are listed on the US EPA-TSCA Inventory.

All components of this product are on the European Inventory of Existing Commercial Chemical Substances (EINECS).

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.

Please contact Product Safety for more information.

<b>DSD/DPD (Europe)</b>	Not evaluated.	<b>HCS (U.S.A.)</b>	CLASS: Contains material which may cause cancer. CLASS: Flammable liquid having a flash point lower than 37.8°C (100°F). CLASS: Toxic. CLASS: Irritating substance. CLASS: Target organ effects.
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<b>ADR (Europe) (Pictograms)</b>	NOT EVALUATED FOR EUROPEAN TRANSPORT NON ÉVALUÉ POUR LE TRANSPORT EUROPÉEN.
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<b>DOT (U.S.A) (Pictograms)</b>	
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<b>HMIS (U.S.A.)</b>	<table border="1"> <tr> <td>Health Hazard</td> <td>2*</td> </tr> <tr> <td>Fire Hazard</td> <td>3</td> </tr> <tr> <td>Reactivity</td> <td>0</td> </tr> <tr> <td>Personal Protection</td> <td>H</td> </tr> </table>	Health Hazard	2*	Fire Hazard	3	Reactivity	0	Personal Protection	H	<b>NFPA (U.S.A.)</b>	<table border="1"> <tr> <td>Health</td> <td></td> <td>Fire Hazard</td> <td>Rating</td> <td>0 Insignificant</td> </tr> <tr> <td></td> <td></td> <td>Reactivity</td> <td></td> <td>1 Slight</td> </tr> <tr> <td></td> <td></td> <td>Specific hazard</td> <td></td> <td>2 Moderate</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>3 High</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>4 Extreme</td> </tr> </table>	Health		Fire Hazard	Rating	0 Insignificant			Reactivity		1 Slight			Specific hazard		2 Moderate					3 High					4 Extreme
Health Hazard	2*																																			
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				3 High																																
				4 Extreme																																

**Section 16. Other Information**

**References** Available upon request.  
\* Marque de commerce de Petro-Canada - Trademark

**Glossary**

ACGIH - American Conference of Governmental Industrial Hygienists	IRIS - Integrated Risk Information System
ADR - Agreement on Dangerous goods by Road (Europe)	LD50/LC50 - Lethal Dose/Concentration kill 50%
ASTM - American Society for Testing and Materials (	LDLo/LCLo - Lowest Published Lethal Dose/Concentration
BOD5 - Biological Oxygen Demand in 5 days	NAERG'96 - North American Emergency Response Guide Book (1996)
CAN/CGA B149.2 Propane Installation Code	NFPA - National Fire Prevention Association
CAS - Chemical Abstract Services	NIOSH - National Institute for Occupational Safety & Health
CEPA - Canadian Environmental Protection Act	NPRI - National Pollutant Release Inventory
CERCLA - Comprehensive Environmental Response, Compensation and Liability Act	NSNR - New Substances Notification Regulations (Canada)
CFR - Code of Federal Regulations	NTP - National Toxicology Program
CHIP - Chemicals Hazard Information and Packaging Approved Supply List	OSHA - Occupational Safety & Health Administration
COD5 - Chemical Oxygen Demand in 5 days	PEL - Permissible Exposure Limit
CPR - Controlled Products Regulations	RCRA - Resource Conservation and Recovery Act
DOT - Department of Transport	SARA - Superfund Amendments and Reorganization Act
DSCL - Dangerous Substances Classification and Labeling (Europe)	SD - Single Dose
DSD/DPD - Dangerous Substances or Dangerous Preparations Directives (Europe)	STEL - Short Term Exposure Limit (15 minutes)
DSL - Domestic Substance List	TDG - Transportation Dangerous Goods (Canada)
EEC/EU - European Economic Community/European Union	TDL0/TCLo - Lowest Published Toxic Dose/Concentration
EINECS - European Inventory of Existing Commercial Chemical Substances	Tm - Median Tolerance Limit
EPCRA - Emergency Planning and Community Right to Know Act	TLV-TWA - Threshold Limit Value-Time Weighted Average
FDA - Food and Drug Administration	TSCA - Toxic Substances Control Act
FIFRA - Federal Insecticide, Fungicide and Rodenticide Act	USEPA - United States Environmental Protection Agency
HCS - Hazardous Communication System	USP - United States Pharmacopoeia
HMIS - Hazardous Material Information System	WHMIS - Workplace Hazardous Material Information System
IARC - International Agency for Research on Cancer	

For Copy of MSDS

Prepared by Product Safety - TAR on 12/3/2001.

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

Data entry by Product Safety - JDW.

For Product Safety Information: (905) 804-4752

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# Material Safety Data Sheet



GASOLINE, UNLEADED



## 1. Product and company identification

- Product name** : GASOLINE, UNLEADED
- Synonym** : Regular, Unleaded Gasoline (US Grade), Mid-Grade, Plus, Super, WinterGas, SummerGas, Supreme, SuperClean WinterGas, RegularClean, PlusClean, Premium, marked or dyed gasoline, TQRUL, transitional quality regular unleaded, BOB, Blendstock for Oxygenate Blending, Conventional Gasoline.
- Code** : W102E, SAP: 102 to 117
- Material uses** : 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.
- Manufacturer** : PETRO-CANADA  
P.O. Box 2844  
150 – 6th Avenue South-West  
Calgary, Alberta  
T2P 3E3
- In case of emergency** : Petro-Canada: 403-296-3000  
Canutec Transportation: 613-996-6666  
Poison Control Centre: Consult local telephone directory for emergency number(s).

## 2. Hazards identification

- Physical state** : Clear liquid.
- Odour** : Gasoline
- WHMIS (Canada)** :    
Class B-2: Flammable liquid  
Class D-2A: Material causing other toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).
- OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Emergency overview** : **WARNING!**  
**FLAMMABLE LIQUID AND VAPOUR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. CONTAINS MATERIAL WHICH MAY CAUSE HERITABLE GENETIC EFFECTS.**  
Flammable liquid. Irritating to eyes, respiratory system and skin. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapour or mist. Avoid contact with eyes, skin and clothing. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure. Contains material which may cause heritable genetic effects. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
- Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.
- Potential acute health effects**
- Inhalation** : Inhalation of this product may cause respiratory tract irritation. Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.
- Ingestion** : Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract. Ingestion of this product may cause Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.

## 2. Hazards identification

**Skin** : Irritating to skin.

**Eyes** : Irritating to eyes.

### Potential chronic health effects

**Chronic effects** : This product contains an ingredient or ingredients, which have been shown to cause chronic toxic effects. Repeated or prolonged exposure to the substance can produce blood disorders.

**Carcinogenicity** : Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : Contains material which may cause heritable genetic effects.

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

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

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

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

See toxicological information (Section 11)

## 3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Gasoline	86290-81-5	85-100
Toluene	108-88-3	15-40*
Benzene	71-43-2	0.5-1.5
Ethanol	64-17-5	0.1-0.3

\*Montreal: may vary from 3-40%

\*Edmonton: may vary from 1-5%

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

## 4. First-aid measures

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

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

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

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

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

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

## 5. Fire-fighting measures

Flammability of the product : Flammable liquid (NFPA) .

### Extinguishing media

Suitable : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

Not suitable : Do not use water jet.

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

Products of combustion : Carbon oxides (CO, 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.

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 : 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.

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

## 6. Accidental release measures

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

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

### Methods for cleaning up

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

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

## 7. Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure - obtain special instructions before use. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly

## 7. Handling and storage

closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

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

## 8. Exposure controls/personal protection

Ingredient	Exposure limits
Gasoline	<b>ACGIH TLV (United States).</b> TWA: 300 ppm 8 hour(s). STEL: 500 ppm 15 minute(s).
Toluene	<b>ACGIH TLV (United States).</b> TWA: 20 ppm 8 hour(s).
Benzene	<b>ACGIH TLV (United States). Absorbed through skin.</b> TWA: 0.5 ppm 8 hour(s). STEL: 2.5 ppm 15 minute(s).
Ethanol	<b>ACGIH TLV (United States).</b> STEL: 1000 ppm 15 minute(s).

**Consult local authorities for acceptable exposure limits.**

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

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

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

### Personal protection

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

## 8 . Exposure controls/personal protection

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

<b>Physical state</b>	: Clear liquid.
<b>Flash point</b>	: Closed cup: -50 to -38°C (-58 to -36.4°F) [Tagliabue.]
<b>Auto-ignition temperature</b>	: 257°C (494.6°F) (NFPA)
<b>Flammable limits</b>	: Lower: 1.3% (NFPA) Upper: 7.6% (NFPA)
<b>Colour</b>	: Clear to slightly yellow or green, undyed liquid. May be dyed red for taxation purposes.
<b>Odour</b>	: Gasoline
<b>Odour threshold</b>	: Not available.
<b>pH</b>	: Not available.
<b>Boiling/condensation point</b>	: 25 to 220°C (77 to 428°F) (ASTM D86)
<b>Melting/freezing point</b>	: Not available.
<b>Relative density</b>	: 0.685 to 0.8 kg/L @ 15°C (59°F)
<b>Vapour pressure</b>	: <107 kPa (<802.5 mm Hg) @ 37.8°C (100°F)
<b>Vapour density</b>	: 3 to 4 [Air = 1] (NFPA)
<b>Volatility</b>	: Not available.
<b>Evaporation rate</b>	: Not available.
<b>Viscosity</b>	: Not available.
<b>Pour point</b>	: Not available.
<b>Solubility</b>	: Hydrocarbon components virtually insoluble in water. Soluble in alcohol, ether, chloroform and benzene. Dissolves fats, oils and natural resins.

## 10 . Stability and reactivity

<b>Chemical stability</b>	: The product is stable.
<b>Hazardous polymerisation</b>	: Under normal conditions of storage and use, hazardous polymerisation will not occur.
<b>Materials to avoid</b>	: Reactive with oxidising agents, acids and interhalogens.
<b>Hazardous decomposition products</b>	: May release CO <sub>x</sub> , NO <sub>x</sub> , phenols, polycyclic aromatic hydrocarbons, aldehydes, ketones, smoke and irritating vapours when heated to decomposition.

## 11 . Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Gasoline	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	13600 mg/kg	-
Toluene	LD50 Dermal	Rabbit	12125 mg/kg	-
	LD50 Oral	Rat	636 mg/kg	-
	LC50 Inhalation Vapour	Rat	7585 ppm	4 hours
Benzene	LD50 Dermal	Rabbit	>8240 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
	LC50 Inhalation Vapour	Rat	13700 ppm	4 hours
Ethanol	LD50 Oral	Rat	7060 mg/kg	-
	LC50 Inhalation Vapour	Rat	>32380 ppm	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
Gasoline	A3	2B	-	-	-	-
Toluene	A4	3	D	-	-	-
Benzene	A1	1	A	+	Proven.	+
Ethanol	A3	-	-	-	-	-

### Mutagenicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : There is a wealth of information about the teratogenic hazards of Toluene in the literature; however, based upon professional judgement regarding the body of evidence, WHMIS classification as a teratogen is not warranted.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

## 12 . Ecological information

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

### Aquatic ecotoxicity

**Conclusion/Summary** : Not available.

### Biodegradability

**Conclusion/Summary** : Not available.


## 13 . Disposal considerations

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

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

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

## 14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1203	GASOLINE	3	II		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG\* : Packing group

## 15 . Regulatory information

### United States

**HCS Classification** : Flammable liquid  
Irritating material  
Carcinogen

### Canada

**WHMIS (Canada)** : Class B-2: Flammable liquid  
Class D-2A: Material causing other toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).

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

### International regulations

**Canada inventory** : All components are listed or exempted.

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

**Europe inventory** : All components are listed or exempted.

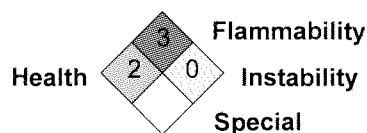
## 16 . Other information

**Label requirements** : FLAMMABLE LIQUID AND VAPOUR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. CONTAINS MATERIAL WHICH MAY CAUSE HERITABLE GENETIC EFFECTS.

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

Health	* 2
Flammability	3
Physical hazards	0
Personal protection	H

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



**References** : Available upon request.  
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**Date of printing** : 10/10/2012.

**Date of issue** : 10 October 2012

**Date of previous issue** : 4/9/2010.

**Responsible name** : **Product Safety - DSR**

☑ Indicates information that has changed from previously issued version.

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

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

For Product Safety Information: (905) 804-4752

### Notice to reader

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



DIESEL FUEL



## 1. Product and company identification

Product name	: DIESEL FUEL
Synonym	: Seasonal Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, D50, D60, P40, P50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend, B1, B2, B5, Diesel Low Cloud (LC), Marine Gas Oil.
Code	: W104, W293
Material uses	: Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining diesels, marine diesels, MDO and naval distillates may have a higher flash point requirement.
Manufacturer	: PETRO-CANADA P.O. Box 2844 150 – 6th Avenue South-West Calgary, Alberta T2P 3E3
<u>In case of emergency</u>	: Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

## 2. Hazards identification

Physical state	: Bright oily liquid.
Odour	: Mild petroleum oil like.
WHMIS (Canada)	:   Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F). Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: WARNING! COMBUSTIBLE LIQUID AND VAPOUR. CAUSES EYE AND SKIN IRRITATION. Combustible liquid. Severely irritating to the skin. Irritating to eyes. Keep away from heat, sparks and flame. Do not get in eyes. Avoid breathing vapour or mist. Avoid contact with skin and clothing. Use only with adequate ventilation. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
<u>Potential acute health effects</u>	
Inhalation	: Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.
Ingestion	: Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract.
Skin	: Severely irritating to the skin.
Eyes	: Irritating to eyes.
<u>Potential chronic health effects</u>	
Chronic effects	: No known significant effects or critical hazards.
Carcinogenicity	: Diesel engine exhaust particulate is probably carcinogenic to humans (IARC Group 2A).
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.

## 2. Hazards identification

- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.
- Medical conditions aggravated by over-exposure** : Avoid prolonged or repeated skin contact to diesel fuels which can lead to dermal irritation and may be associated with an increased risk of skin cancer.

See toxicological information (Section 11)

## 3. Composition/information on ingredients

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

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

## 4. First-aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## 5. Fire-fighting measures

**Flammability of the product** : Combustible liquid

### Extinguishing media

- Suitable** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Products of combustion** : Carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), sulphur oxides (SO<sub>x</sub>), sulphur compounds (H<sub>2</sub>S), smoke and irritating vapours as products of incomplete combustion.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 5 . Fire-fighting measures

- Special remarks on fire hazards** : Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite.
- Special remarks on explosion hazards** : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Runoff to sewer may create fire or explosion hazard.

## 6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods for cleaning up

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

## 7 . Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Ensure the storage containers are grounded/bonded.

## 8 . Exposure controls/personal protection

Ingredient	Exposure limits
Fuels, diesel	<b>ACGIH TLV (United States). Absorbed through skin.</b> TWA: 100 mg/m <sup>3</sup> , (Inhalable fraction and vapour) 8 hour(s).
Fuel oil No. 2	<b>ACGIH TLV (United States). Absorbed through skin.</b> TWA: 100 mg/m <sup>3</sup> , (Inhalable fraction and vapour) 8 hour(s).
Hydrotreated Renewable Diesel	<b>ACGIH TLV (United States). Absorbed through skin.</b> TWA: 200 mg/m <sup>3</sup> 8 hour(s).
Fuel oil No. 1	<b>ACGIH TLV (United States). Absorbed through skin.</b> TWA: 200 mg/m <sup>3</sup> 8 hour(s).

### Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal protection

- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.  
Recommended: nitrile, neoprene, polyvinyl alcohol (PVA), Viton®. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9 . Physical and chemical properties

Physical state	: Bright oily liquid.
Flash point	: Diesel fuel and other distillate fuels: Closed cup: $\geq 40^{\circ}\text{C}$ ( $\geq 104^{\circ}\text{F}$ ) Marine Diesel/MDO/Naval Distillate: Closed Cup: $\geq 60^{\circ}\text{C}$ ( $\geq 140^{\circ}\text{F}$ ) Mining Diesel: Closed Cup: $\geq 52^{\circ}\text{C}$ ( $\geq 126^{\circ}\text{F}$ )
Auto-ignition temperature	: $225^{\circ}\text{C}$ ( $437^{\circ}\text{F}$ )
Flammable limits	: Lower: 0.7% Upper: 6%
Colour	: Clear to yellow (This product may be dyed red for taxation purposes).
Odour	: Mild petroleum oil like.
Odour threshold	: Not available.
pH	: Not available.
Boiling/condensation point	: $150$ to $371^{\circ}\text{C}$ ( $302$ to $699.8^{\circ}\text{F}$ )
Melting/freezing point	: Not available.
Relative density	: $0.80$ to $0.88$ kg/L @ $15^{\circ}\text{C}$ ( $59^{\circ}\text{F}$ )
Vapour pressure	: $1$ kPa ( $7.5$ mm Hg) @ $20^{\circ}\text{C}$ ( $68^{\circ}\text{F}$ ).
Vapour density	: $4.5$ [Air = 1]
Volatility	: Not available.
Evaporation rate	: Not available.
Viscosity	: Diesel fuel: $1.3$ - $4.1$ cSt @ $40^{\circ}\text{C}$ ( $104^{\circ}\text{F}$ ) Marine Diesel Fuel: $1.3$ - $4.4$ cSt @ $40^{\circ}\text{C}$ ( $104^{\circ}\text{F}$ )
Pour point	: Not available.
Solubility	: Insoluble in cold water, soluble in non-polar hydrocarbon solvents.

## 10 . Stability and reactivity

Chemical stability	: The product is stable.
Hazardous polymerisation	: Under normal conditions of storage and use, hazardous polymerisation will not occur.
Materials to avoid	: Reactive with oxidising agents and acids.
Hazardous decomposition products	: May release COx, NOx, SOx, H <sub>2</sub> S, smoke and irritating vapours when heated to decomposition.

## 11 . Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Fuels, diesel	LD50 Dermal	Mouse	24500 mg/kg	-
	LD50 Oral	Rat	7500 mg/kg	-
Fuel oil No. 2	LD50 Oral	Rat	12000 mg/kg	-
Fuel oil No. 1	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation	Rat	>5000 mg/m <sup>3</sup>	4 hours
	Vapour			
Hydrotreated Renewable Diesel	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation	Rat	>5200 mg/m <sup>3</sup>	4 hours
	Vapour			

Conclusion/Summary : Not available.

### Chronic toxicity

Conclusion/Summary : Not available.

### Irritation/Corrosion

Conclusion/Summary : Not available.

### Sensitiser

## 11 . Toxicological information

**Conclusion/Summary** : Not available.

### Carcinogenicity

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

### Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Fuels, diesel	A3	3	-	-	-	-
Fuel oil No. 1	A3	3	-	-	-	-
Fuel oil No. 2	A3	3	-	-	-	-
Hydrotreated Renewable Diesel	A3	3	-	-	-	-

### Mutagenicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

## 12 . Ecological information

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

### Aquatic ecotoxicity

**Conclusion/Summary** : Not available.

### Biodegradability

**Conclusion/Summary** : Not available.


## 13 . Disposal considerations

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

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

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

## 14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1202	DIESEL FUEL	3	III		-
DOT Classification	Not available.	Not available.	Not available.	-		-

## 14 . Transport information

PG\* : Packing group

## 15 . Regulatory information

### United States

HCS Classification : Combustible liquid  
Irritating material

### Canada

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

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

### International regulations

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

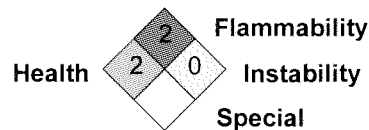
## 16 . Other information

Label requirements : COMBUSTIBLE LIQUID AND VAPOUR. CAUSES EYE AND SKIN IRRITATION.

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

Health	2
Flammability	2
Physical hazards	0
Personal protection	H

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



References : Available upon request.  
<sup>TM</sup> Trademark of Suncor Energy Inc. Used under licence.

Date of printing : 4/14/2014.

Date of issue : 28 June 2013

Date of previous issue : No previous validation.

Responsible name : **Product Safety - DSR**

▣ Indicates information that has changed from previously issued version.

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

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

For Product Safety Information: (905) 804-4752

### Notice to reader

**16 . Other information**

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

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



## MATERIAL SAFETY DATA SHEET

### SECTION I – PRODUCT INFORMATION

**Product Name:** Propane

**Trade Name:** LPG (Liquefied Petroleum Gas)

**Chemical Formula:** C<sub>3</sub>H<sub>8</sub>

**WHMIS Classification:** Class A – Compressed Gas  
Class B, Division I – Flammable Gas

**Supplier:** <Product Supplier Contact Information>

**Manufacturer:** <Product Manufacturer Contact Information>

**Non-Medical Emergency:** <Phone number>

**Uses and Occurrence:** Propane is commonly used as fuel for heating, cooking, automobiles, forklift trucks, crop drying and welding and cutting operations. Propane is used in industry as a refrigerant, solvent and as a chemical feedstock.

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

### SECTION II – HAZARDOUS INGREDIENTS

Components	CAS Registry No.	Proportion of Product	LC50	LD50
Propane	74-98-6	95% - 98%	N/A	N/A
Ethane	74-84-0	3% - 5%	N/A	N/A
Butane	106-97-8	1% - 3%	N/A	N/A
Iso-Butane	75-28-5	0.1% - 0.3%	N/A	N/A
Methane	74-82-8	0.1% - 0.2%	N/A	N/A

**Note:** Composition given is typical for Grade 1 (GPA2140 HD-5 Specification) Propane; exact composition will vary from shipment to shipment.

### SECTION III – CHEMICAL AND PHYSICAL DATA

**Form:** While stored under pressure – liquid and/or vapour

**Boiling Point:** -42 °C atm

**Freezing Point:** -188 °C

**Evaporation Rate:** Rapid (Gas at Normal Ambient Conditions)

**Vapour Pressure:** 1,013 (kPa) @ 26.0 °C

**Vapour Density:** 1.52 (Air = 1)

**Coefficient of Water/Oil Distribution:** Not available

**PH:** Not available

**Soluble in Water:** 6.1% by Volume @ 17.8 °C  
and 753 mmHg

**Specific Gravity:** 0.51 (Water = 1)

**Appearance:** Colourless liquid and vapour while stored under pressure.

Colourless and odourless gas in natural state at any concentration.

Commercial propane has an odourant added which is commonly ethyl mercaptan which has an odour similar to boiling cabbage or rotten eggs.

**Odour Threshold:** 4800 PPM

**See Note 1 - Odourants**

#### SECTION IV – FIRE OR EXPLOSION HAZARD DATA

**Flash Point:** -103.4 °C     **Method:** Closed Cup

**Flammable Limits:** Lower 2.4%, Upper 9.5%

**Auto Ignition Temperature:** 432 °C

**Products Evolved Due to Heat or Combustion:** Carbon monoxide can be produced when primary and secondary airs are deficient while combustion is taking place.

**Fire and Explosive Hazards:** Explosive air-vapour mixtures may form if allowed to leak to atmosphere.

**Sensitivity to Impact:** No

**Sensitivity to Static Discharge:** Yes

**Fire Extinguishing Precautions:** Use water spray to cool exposed cylinders or tanks. Do not extinguish fire unless the source of the escaping gas that is fuelling the fire can be turned off. Fire can be extinguished with carbon dioxide and/or dry chemical (BC). Container metal shells require cooling with water to prevent flame impingement and the weakening of metal. If weakening occurs, the area must be evacuated. If gas has not ignited, liquid and vapour may be dispersed by water spray or flooding.

**Special Fire Fighting Equipment:** Protective clothing, hose monitors, fog nozzles, self contained breathing apparatus.

#### SECTION V – REACTIVITY DATA

**Stability:** Stable

**Conditions to Avoid:** Keep separate from oxidizing agents. Gas explodes spontaneously when mixed with chlorine dioxide.

**Incompatibility:** Remove sources of ignition and observe distance requirements for storage tanks from combustible material, drains, and openings to buildings.

**Hazardous Decomposition Products:** Deficient primary and secondary air can produce carbon monoxide.

**Hazardous Polymerization:** Will not occur.

#### SECTION VI – TOXICOLOGICAL PROPERTIES OF MATERIAL

##### ACUTE EXPOSURE:

**Eyes:** As a gas, none, Liquid causes "cold burns".

**Respiratory System:** Little physiological effect at concentrations below 10,000 PPM. Higher concentrations may cause dizziness and unconsciousness due to asphyxiation.

**SEE NOTE 2 – ASPHYXIAN.**

**Chronic Exposure:** There are no reported effects from long-term low-level exposure.

**Other:** Liquid can cause burns and frostbite if in direct contact with skin.

**Sensitization Properties:** Skin – unknown, **Respiratory** – unknown.

**Carcinogenicity:** Not determined.

**SEE NOTE 3 (NORM).**

##### MEDIAN LETHAL DOSE:

**Oral:** Not applicable for gas.

**Inhalation:** Not determined.

**Dermal:** Not applicable for gas.

**Other:** Not determined.

##### IRRITATION INDEX:

**Skin:** No appreciable effect (gas).

**Eyes:** No appreciable effect (gas).

**Symptoms of Exposure:** Above 10,000 PPM – dizziness, stupor, unconsciousness. **SEE NOTE 2 attached.**

American Conference of Governmental Industrial Hygienists (ACGIH) classifies propane as an asphyxiate; there is no recommended "Threshold Limit Value" (TLV).

**Teratogenicity:** Not determined.

**Mutagenicity:** Not determined.

#### SECTION VII – OCCUPATION CONTROL PROCEDURES

**Eyes:** Safety glasses, goggles, or face shield required when transferring product.

**Skin:** Insulated gloves if contact with liquid or liquid cooled equipment is expected. Wear gloves and long sleeves when transferring product.

**Inhalation:** In atmosphere, where the concentration of propane would reduce oxygen level below 18% in inhaled air, self contained breathing apparatus required.

**SEE NOTE 3 – (NORM).**

**Ventilation:** Explosion proof ventilation equipment required in confined spaces.

#### SECTION VIII – EMERGENCY AND FIRST AID PROCEDURES

##### FIRST AID:

**Eyes:** Should eye contact with liquid occur, flush eyes with lukewarm water for 15 minutes. Obtain immediate medical care.

**Skin:** In case of “Cold Burn” from contact with liquid, immediately place affected area in lukewarm water and keep at this temperature until circulation returns. If fingers or hands are frostbitten, have the victim hold his hand next to his body such as under the armpit. Obtain immediate medical care.

##### SPILL OR LEAK:

Eliminate leak if possible.

Eliminate source of ignition.

Ensure cylinder is upright.

Disperse vapours with hose streams using fog nozzles, watch for low area, as propane is heavier than air and can settle in low areas. Remain upwind of leak, keep people away.

Prevent vapour and/or liquid from entering into sewers, basements or confined areas.

#### SECTION 1X – TRANSPORTATION, HANDLING AND STORAGE

- Transport and store cylinders and tanks secured in an upright position in a ventilated space, away from ignition sources (so relief valve is in contact with vapour space of cylinder or tank).
- Cylinders that are not in use must have the valves in the closed position and be equipped with a protective cap or guard.
- Do not store with oxidizing agents, oxygen or chlorine cylinders.

- Transport, handle and store according to applicable federal and provincial regulations (CGA B149.2).

- **SEE NOTE 4 – MAGNETIC RESIDUES.**

**TDG Classification:** 2.1 (gas)

**TDG Shipping Name:** Liquid Petroleum Gas (Propane)

**TDG Special Provisions:** 56, 90, and 102

**PIN UN:** 1075

## SECTION X – PREPARATION INFORMATION

**Prepared by:** Canadian Propane Association  
(613) 683-2270

**Date prepared:** July 2012  
Last updated: May 2014

The information contained herein is believed to be accurate. It is provided independently of any sale of the product. It is not intended to constitute performance information concerning the product. No express warranty or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product information contained herein.

This information is in addition to the information supplied on the MSDS and forms a part of the MSDS by reference to note numbers indicated:

### **NOTE 1 - ODOURANTS:**

Odourants are not completely effective warning agents in all cases.

Certain odourants are polar and/or chemically reactive and may be depleted by reaction or absorption.

Sensitivity to odourants differs from person to person and may decrease with age or impaired physical conditions such as colds or respiratory allergies.

Prolonged exposure to odourants can create desensitization to the odour.

### **NOTE 2 - ASPHYXIAANT AND NARCOTIC EFFECTS OF PROPANE:**

LPG's can displace air and can act as an asphyxiant. Lack of oxygen may cause dizziness, headaches, diminished awareness, faulty judgment, increase in fatigue and impaired muscular co-ordination. If these symptoms are identified while working in close proximity to propane that is released, go immediately into a fresh air environment.

LPG's are anaesthetic gases within the upper explosive limits and higher concentrations. A person working around propane in an enclosed space or in close proximity to a propane source such as filling cylinders, purging lines, investigating leaks, etc. who feels light-headed, dizzy, drunken, sleepy, or intoxicated should go immediately into fresh air. This narcotic effect may impair a person's judgment temporarily but will rapidly disappear in fresh air.

### **NOTE 3 - NATURALLY OCCURRING RADIOACTIVE MATERIAL (NORM):**

Sludges and tank scale from propane storage tanks, bulk delivery truck tanks, railway tank cars, and fuel filters and strainers screens may contain Naturally Occurring Radioactive Material (NORM) in the form of lead 210.

Equipment used for the transfer of propane such as propane piping and hoses, pumps and compressors may have detectable levels of radioactive lead 210 on inner surfaces.

Workers involved in cleaning, repair or maintenance on inner surfaces of such equipment should avoid breathing dust generated from such activities. Suitable codes of practice should be developed for the activities, detailing appropriate occupational hygiene and disposal practices.

### **NOTE 4 - MAGNETIC RESIDUES IN PROPANE:**

Magnetic residues present in automotive fuel tanks from "mill scale" or corrosion processes may impair the operation of magnetic gauges and electronic solenoid valves.

Collection of gross amounts of solid residues can affect the proper operation of lock offs, mixers, pressure release valves, etc.

Solid residues could contain NORM (see note 3).

# 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.



## EXTREME ALKAMER

## 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 / *Phesodactylum 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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**EMERGENCY PHONE NO. (604) 575-6660**

**EXTREME CALCIUM CHLORIDE**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 0  
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 CALCIUM CHLORIDE 94-97%  
CHEMICAL IDENTIFICATION: Inorganic Calcium Salt  
MATERIAL USE: Well Drilling fluid and Cement Additive  
WHMIS CLASSIFICATION: D2B  
WORK PLACE HAZARD: Eye Irritant

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: N/A  
PACKAGE GROUP: N/A  
CAS NUMBER: 10043-52-4  
MSDS CODE:

## SECTION 2

## HAZARDOUS INGREDIENTS

INGREDIENT: Calcium Chloride  
PERCENTAGE: 94-97%  
CAS NUMBER: 10043-52-4  
LD (50): (Rat) 1000mg/kg  
LC (50): No Information

## EXTREME CALCIUM CHLORIDE

## MATERIAL SAFETY DATA SHEET

**SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	White to off white powder, odourless
DENSITY (SPECIFIC GRAVITY):	2.2
BOILING POINT:	1670
MELTING POINT:	772 (Approx)
SOLUBILITY:	Very Soluble pH:8-9 (35% solution)
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:	Use material suitable for surrounding fire and packaging.
SPECIAL FIRE FIGHTING PROCEDURES:	Self contained breathing apparatus required for fire fighting personnel.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Hydrogen Chloride is a hazardous combustion product at temperatures above 1600 <sup>0</sup> C

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

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	May react violently with processed lime to produce heat. Corrosive to some metals. Corrosive when wet. Flammable hydrogen may be generated from contact with metals such as zinc or sodium. Avoid contact with sulfuric acid. Heat is generated when mixed with water.
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	None

## EXTREME CALCIUM CHLORIDE

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

## ROUTE OF ENTRY:

(X) SKIN

(X) EYE CONTACT

(X) INHALATION

(X) INGESTION

## SKIN CONTACT:

Prolonged or repeated contact with dust may irritate the skin or cause burns especially if the skin is moist or if material is confined to the skin.

## EYE CONTACT:

Solid or concentrated liquid will cause moderate to severe eye irritation with corneal injury that may be slow to heal. When dissolving, the heat produced may cause more intense effects as well as thermal burns.

## INHALATION:

Breathing dust may irritate the nose and throat and cause coughing and chest discomfort.

## INGESTION:

Oral toxicity is considered low. Swallowing solids may cause gastrointestinal irritation or ulceration.

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

## SKIN PROTECTION:

Full body protection recommended. Ensure eyewash station available.

## EYE PROTECTION:

Chemical goggles recommended.

## VENTILATION:

Use local exhaust ventilation, process enclosure or other engineering controls to maintain dust levels below TLV.

## RESPIRATORY PROTECTION:

NIOSH/MESA approved dust mask or respirator if high dust levels expected.

## LEAK &amp; SPILL PROCEDURE:

Wear suitable protective equipment. Collect uncontaminated material for repacking. Collect contaminated material in an approved container for disposal. Wash residual material with copious amounts of water.

## WASTE DISPOSAL:

Dispose/landfill in accordance with federal, provincial and local regulations.

**EXTREME CALCIUM CHLORIDE**

**MATERIAL SAFETY DATA SHEET**

**SECTION 8**

**FIRST AID MEASURES**

SKIN:

Wash affected area with soapy water. Remove contaminated clothing and shoes; wash before reuse.

EYE:

Flush with water for 15 minutes. Obtain medical attention when eyewash is complete.

INHALATION:

Move to fresh air. If breathing difficulties persist seek medical attention.

INGESTION:

Do not induce vomiting. Rinse mouth with water. Give 1-2 glasses of water to drink. If spontaneous occurs, keep airway clear and rinse mouth and re-administer water.

**SECTION 9**

**PREPARATION DATE**

DATE ISSUED:

AUGUST 20, 1996

DATE REVISED:

JANUARY 01, 2012

BY:

PRODUCT SAFETY COMMITTEE

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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.

**MATERIAL SAFETY DATA SHEET****EXTREME CLAY SEAM****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:

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  
Chemical goggles.

EYE PROTECTION:

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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# MATERIAL SAFETY DATA SHEET



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**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 & 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

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## 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

## EXTREME EXTRA HIGH YIELD GEL

## MATERIAL SAFETY DATA SHEET

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

## ROUTE OF ENTRY:

(X) SKIN

(X) EYE CONTACT

(X) INHALATION

(X) 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

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**EXTREME FLOXALL**

**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 FLOXALL  
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 FLOXALL

**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 FLOXALL

**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 & 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 FLOXALL

**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, 1996  
DATE REVISED: JANUARY 01, 2012  
BY: PRODUCT SAFETY COMMITTEE

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## EXTREME FLOXALL

## 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 tricournutum > 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.

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PAGE 1 OF 4

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

**Extreme HV Salt Polymer**

## 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 HV SALT POLYMER  
CHEMICAL IDENTIFICATION: Polymer

MATERIAL USE: Drilling Mud Additive

**WHMIS Classification:** Not a Controlled Product Under WHMIS

**Work Place Hazard:** Not Applicable

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

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

## SECTION 2

## HAZARDOUS INGREDIENTS

INGREDIENT: No Hazardous Ingredients  
PERCENTAGE:  
CAS NUMBER:  
LD (50):  
LC (50):

## Extreme HV Salt Polymer

## MATERIAL SAFETY DATA SHEET

**SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR	: Light beige powder, slight odour
DENSITY (SPECIFIC GRAVITY)	: 1.5
BOILING POINT	: Not applicable
MELTING POINT	: Not applicable
SOLUBILITY IN WATER	: Complete pH @ 1.0%: 5.0-6.5
PERCENT VOLATILE BY VOLUME	: 15% Maximum (H2O)
EVAPORATION RATE: (EE=1)	: Not applicable
VAPOUR PRESSURE: (MM HG)	: Not applicable
VAPOUR DENSITY: (AIR = 1)	: Not applicable

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

FLASHPOINT	: Not applicable
FLAMMABLE LIMIT	: Not applicable
AUTO IGNITION TEMP:	:
EXTINGUISHING MEDIA:	: Dry chemical, foam, water fog, spray
SPECIAL FIRE FIGHTING PROCEDURES:	: Self-contained respirators required for fire fighting personnel
UNUSUAL FIRE AND EXPLOSION HAZARDS:	: Combustible dust in the finely divided and suspended state

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

STABILITY (THERMAL, LIGHT, ETC.)	: Stable (XX) Unstable ( )
INCOMPATIBILITY (CONDITIONS TO AVOID)	: Strong oxidizing agents and caustic solutions
HAZARDOUS POLYMERIZATION	: Will Not Occur (XX) May Occur ( )
HAZARDOUS DECOMPOSITION PRODUCTS	: None



Extreme HV Salt Polymer

**MATERIAL SAFETY DATA SHEET**

**SECTION 6**

**HEALTH HAZARDS**

ROUTE OF ENTRY:

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

SKIN CONTACT:

EYE CONTACT:

INHALATION

: Excessive inhalation of dust impeded respiration due to hygroscopic properties.

INGESTION:

**SECTION 7**

**PREVENTATIVE MEASURES**

SKIN PROTECTION

: None required

EYE PROTECTION

: None required

VENTILATION

: 10 changes per hour suggested

RESPIRATORY PROTECTION

: Suggest NIOSH/MESA approved dust mask

LEAK & SPILL PROCEDURE

: Sweep up spilled material and repackage. Hose spill area very thoroughly. This product becomes slippery when wet.

WASTE DISPOSAL

: Dispose of material in accordance with local ordinances. Landfill is suggested.

STORAGE REQUIREMENTS

: Product becomes very slippery when wet. Wash thoroughly after handling. Keep container closed. Exercise caution in the storage and handling of all chemical substances. Use in ventilated area.

**MATERIAL SAFETY DATA SHEET**

**Extreme HV Salt Polymer**

**SECTION 8**

**FIRST AID MEASURES**

SKIN : Ordinary measure of personal hygiene should be adequate

EYE : Flush with plenty of water. If irritation develops, call a physician.

INHALATION : Symptomatic treatment

INGESTION : Essentially non-toxic

**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 KOTE WELL

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 1  
FIRE 2  
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 Kote Well  
CHEMICAL IDENTIFICATION: Filming amines  
MATERIAL USE: Corrosion inhibitor  
WHMIS CLASSIFICATION: B3; D2B  
WORK PLACE HAZARD: Combustible liquid; skin & eye irritant

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: N/A  
PACKAGE GROUP: N/A  
CAS NUMBER: N/A  
MSDS CODE: N/A

## SECTION 2

## HAZARDOUS INGREDIENTS

<u>INGREDIENT</u>	<u>PERCENTAGE</u>	<u>CAS NUMBER</u>	<u>LD (50)</u>	<u>LC (50)</u>
Fatty acid, tall oil polymerized	10-30	73138-54-2	Undetermined	Undetermined
Imidazoline	7-13	61790-69-0	1080 mg/kg	Undetermined
Ethoxylated nonyl phenol	1-5	9016-45-9	3550 mg/kg	Undetermined
2-Ethyl hexanol	4-7	104-76-7	2049 mg/kg	Undetermined

## EXTREME KOTE WELL

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

APPEARANCE AND ODOUR:	Dark amber liquid; amine odour
DENSITY (SPECIFIC GRAVITY):	0.91-0.92
BOILING POINT:	Undetermined
MELTING POINT:	<-15°C
SOLUBILITY:	Soluble (Oil)
EVAPORATION RATE: (EE=1):	Undetermined
VAPOUR PRESSURE: (MM HG):	Undetermined
VAPOUR DENSITY: (AIR = 1):	Undetermined

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

FLASHPOINT:	43°C (PMCC)
FLAMMABLE LIMIT:	Undetermined
AUTO IGNITION TEMP:	
EXTINGUISHING MEDIA:	CO2, water fog, mist, foam.
SPECIAL FIRE FIGHTING PROCEDURES:	Self contained breathing apparatus required for fire fighting personnel. Move containers from fire area, or cool with water spray, if possible.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Vapours may form explosive mixture in air. Vapours may travel to ignition source and flash back.

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

STABILITY (THERMAL, LIGHT, ETC.):	Stable.
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizing agents. Avoid high temperatures and ignition sources.
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of carbon and nitrogen on combustion.

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

ROUTE OF ENTRY:  
 (XX) SKIN                      (XX) EYE CONTACT                      (XX) INHALATION                      (XX) INGESTION

SKIN CONTACT: May cause moderate to severe irritation, redness & swelling, itching, tingling sensation and painful burning.

**MATERIAL SAFETY DATA SHEET**

**EXTREME KOTE WELL**

**SECTION 6 CONTINUED**

**HEALTH HAZARDS**

**EYE CONTACT:** Severe irritant. Causes stinging or burning of eyes and lids, watering of eyes, conjunctivitis, opaqueness of cornea possibly leading to loss of sight. 2-Ethylhexanol is a severe eye irritant.

**INHALATION:** May cause irritation of upper respiratory tract, coughing and difficulty in breathing. Inhalation of mists or spray may cause chemical pneumonitis.

**INGESTION:** May cause irritation to mouth, throat and esophagus; nausea and vomiting. Chronic exposure to an ingredient in this product has been shown to cause adverse effects on the liver in laboratory animals.

**SECTION 7**

**PREVENTATIVE MEASURES**

**SKIN PROTECTION:** Suggest neoprene gloves. Chemical resistant protective clothing must be worn at all times when handling this product. Ensure eyewash station and emergency shower are available.

**EYE PROTECTION:** Chemical goggles and/or face shield must be worn at all times when handling this product. Do not wear contact lenses.

**VENTILATION:** Use local exhaust ventilation, process enclosure or other engineering controls to maintain airborne levels below TLV. Ensure equipment is explosion proof.

**RESPIRATORY PROTECTION:** Use approved respirator with organic vapour cartridge if ventilation is inadequate.

**LEAK & SPILL PROCEDURE:** Use appropriate safety equipment. Eliminate ignition sources. Avoid all bodily contact with spilled material. Small spills: soak up with absorbent material. Large spills: dike to contain spill to prevent water pollution. Collect material and absorbent in approved containers for disposal.

**WASTE DISPOSAL:** Dispose of 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. Empty containers that have not been cleaned and purged, contain residual material and must be disposed of or recycled in accordance with local regulations.

**EXTREME KOTE WELL**

**MATERIAL SAFETY DATA SHEET**

**SECTION 7 CONTINUED**

**PREVENTATIVE MEASURES**

STORAGE REQUIREMENTS: Store in a cool, dry, well-ventilated area away from ignition sources and incompatibles.

**SECTION 8**

**FIRST AID MEASURES**

SKIN: Immediately wash with soap and running water while removing contaminated clothing. If irritation persists, or develops, obtain medical attention. Launder clothes prior to re-use. Discard contaminated leather articles.

EYE: Flush with gently flowing warm water for 15 minutes. Obtain medical attention.

INHALATION: Move patient to fresh air. Apply oxygen or artificial respiration if required. Obtain medical attention.

INGESTION: Do not induce vomiting. Rinse mouth and give 1 to 2 glasses of water to dilute material. If spontaneous vomiting occurs, keep head lower than hips to prevent aspiration of vomitus and give more water. Obtain immediate medical attention. Never give anything by mouth to an unconscious or convulsing victim.

**SECTION 9**

**PREPARATION DATE**

DATE ISSUED:  
DATE REVISED:

AUGUST 20, 1996  
JANUARY 01, 2012

BY:

PRODUCT SAFETY COMMITTEE

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# MATERIAL SAFETY DATA SHEET



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Tel: 604-575-6660 Fax: 604-575-5494 e-mail: extreme.ron@telus.net

**EXTREME KWIK-SEAL**

**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 KWIK-SEAL (Fine, Medium, Coarse)  
CHEMICAL IDENTIFICATION: Mixture of Natural and Polymer Fibers  
MATERIAL USE: Drilling Fluid Additive for lost circulation  
WHMIS CLASSIFICATION: Not Controlled  
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: No hazardous ingredients  
PERCENTAGE: N/A  
CAS NUMBER: N/A  
LD (50): N/A  
LC (50): N/A

## EXTREME KWIK-SEAL

## MATERIAL SAFETY DATA SHEET

**SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	Golden Tan to Brown; slight odour
DENSITY (SPECIFIC GRAVITY):	.15 to 1.5
BOILING POINT:	N/A
MELTING POINT:	N/A
SOLUBILITY:	Not soluble
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:	Not determined
EXTINGUISHING MEDIA:	Waterspray, dry chemical, foam
SPECIAL FIRE FIGHTING PROCEDURES:	Self-contained respirators required for fire fighting personnel.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Can be combustible in a finely divided and suspended state.

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

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	None
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	None



## EXTREME KWIK-SEAL

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

## ROUTE OF ENTRY:

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

## SKIN CONTACT:

May cause itching or mild irritation.

## EYE CONTACT:

May cause irritation.

## INHALATION:

Dust may cause irritation.

## INGESTION:

No adverse affects from small quantities

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

## SKIN PROTECTION:

Standard work clothes and gloves.

## EYE PROTECTION:

Wear protective goggles.

## VENTILATION:

10 Changes per hour suggested.

## RESPIRATORY PROTECTION:

Nuisance dust, suggest NIOSH/MESA approved dust mask.

## LEAK &amp; SPILL PROCEDURE:

Vacuum or sweep-up.

## WASTE DISPOSAL:

Dispose of in compliance with government regulation and local requirements.

## STORAGE REQUIREMENTS:

No special requirements.

**EXTREME KWIK-SEAL**

**MATERIAL SAFETY DATA SHEET**

**SECTION 8**

**FIRST AID MEASURES**

SKIN:	Wash with soap and water.
EYE:	Treat as nuisance dust, flush with water.
INHALATION:	Treat as nuisance dust, remove subject to fresh air.
INGESTION:	No adverse affects from small quantities.

**SECTION 9**

**PREPARATION DATE**

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

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**EXTREME KWIK-SET**

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

**PAGE 1 OF 4**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 0  
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 KWIK-SET  
CHEMICAL IDENTIFICATION: Calcium Sulphate  
MATERIAL USE: Oilwell Cement  
WHMIS CLASSIFICATION: Not Hazardous Material  
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: No Hazardous Ingredients  
PERCENTAGE:  
CAS NUMBER:  
LD (50):  
LC (50):

## EXTREME KWIK-SET

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

APPEARANCE AND ODOUR:	Greyish White to Buff Powder. Little odour.
DENSITY (SPECIFIC GRAVITY):	2.7
BOILING POINT:	N/A
MELTING POINT:	N/A
SOLUBILITY:	2% @ 40°C
EVAPORATION RATE: (EE=1):	N/A
VAPOUR PRESSURE: (MM HG):	N/A
VAPOUR DENSITY: (AIR = 1):	N/A
pH:	7-8 (Slurry)

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

FLASHPOINT:	Not Combustible
FLAMMABLE LIMIT:	Not Combustible
AUTO IGNITION TEMP:	Not Combustible
EXTINGUISHING MEDIA:	Not Combustible
SPECIAL FIRE FIGHTING PROCEDURES:	No Special Requirements
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None

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

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	None Known
HAZARDOUS POLYMERIZATION:	Will Not Occur
HAZARDOUS DECOMPOSITION PRODUCTS:	None

## EXTREME KWIK-SET

## MATERIAL SAFETY DATA SHEET

SECTION 6HEALTH HAZARDS

## ROUTE OF ENTRY:

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

## SKIN CONTACT:

May dry skin; may develop heat sufficient to cause burns if large mass is in contact with skin during hardening (hydration).

## EYE CONTACT:

Particles may cause irritation.

## INHALATION:

Nuisance dust may cause sneezing and nasal irritation. May contain trace amounts of crystalline silica, which is known to cause silicosis when exposed to greater amounts.

## INGESTION:

Avoid ingestion; product may harden on contact with water. May cause obstruction.

SECTION 7PREVENTATIVE MEASURES

## SKIN PROTECTION:

Standard work clothes and gloves.

## EYE PROTECTION:

Nuisance dust, suggest goggles.

## VENTILATION:

No special requirements. 10 changes per hour suggested.

## RESPIRATORY PROTECTION:

Nuisance dust, suggest NIOSH/MESA approved dust mask.

## LEAK &amp; SPILL PROCEDURE:

Vacuum or sweep-up.

## WASTE DISPOSAL:

Dispose of in compliance with government regulations and local requirements.

## STORAGE REQUIREMENTS:

Store in a cool, dry area.

**EXTREME KWIK-SET**

**MATERIAL SAFETY DATA SHEET**

**SECTION 8**

**FIRST AID MEASURES**

SKIN: Wash promptly with water. If irritation develops consult a physician.

EYE: Rinse eyes with plenty of running water for 10-15 minutes including under eyelids. If irritation persists, contact a physician.

INHALATION: Remove to fresh air.

INGESTION: Product may harden on contact with water. May result in obstruction if ingested. See physician.

**SECTION 9**

**PREPARATION DATE**

DATE ISSUED: MAY 1, 1997

DATE REVISED: JANUARY 01, 2012

BY: PRODUCT SAFETY COMMITTEE

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## EXTREME LINSEED LUBE

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 LINSEED LUBE  
CHEMICAL IDENTIFICATION: Linseed Soap  
MATERIAL USE: Lubricating Compound  
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: Linseed Soap  
PERCENTAGE: 100%  
CAS NUMBER: Mixture  
LD (50):  
LC (50):

## EXTREME LINSEED LUBE

## MATERIAL SAFETY DATA SHEET

**SECTION 3****PHYSICAL DATA**

APPEARANCE AND ODOUR:	Brown Colour, Semi-Solid Grease, Slight Hydrocarbon Odour.
DENSITY (SPECIFIC GRAVITY):	1.0
BOILING POINT:	100°C
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:	222°C
FLAMMABLE LIMIT:	Not Available
AUTO IGNITION TEMP:	343°C
EXTINGUISHING MEDIA:	Dry Chemical, Foam, Water Fog, CO <sub>2</sub>
SPECIAL FIRE FIGHTING PROCEDURES:	No special requirements. Caution, Spilled Material is slippery.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None currently known.

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

STABILITY (THERMAL, LIGHT, ETC.):	No Data
INCOMPATIBILITY (CONDITIONS TO AVOID):	Not Available
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	No Data



**EXTREME LINSEED LUBE**

**MATERIAL SAFETY DATA SHEET**

**SECTION 6**

**HEALTH HAZARDS**

ROUTE OF ENTRY:

(X) SKIN

(X) EYE CONTACT

(X) INHALATION

(X) INGESTION

SKIN CONTACT:

Prolonged and repeated contact may cause drying of skin resulting in irritation and dermatitis.

EYE CONTACT:

May cause eye irritation.

INHALATION:

Oil mist or vapours from hot grease may cause irritation of upper respiratory tract.

INGESTION:

Harmful if swallowed.

**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. Otherwise use self-contained respirator if conditions of oil mist exist.

LEAK & 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 LINSEED LUBE**

**MATERIAL SAFETY DATA SHEET**

**SECTION 8**

**FIRST AID MEASURES**

SKIN:	Wipe excess from skin. Wash with mild soap and water. Remove contaminated clothing.
EYE:	Flush with water for at least 15 minutes.
INHALATION:	Not ordinarily required under normal conditions. Remove victim from further exposure.
INGESTION:	Do not induce vomiting. Obtain medical attention immediately.

**SECTION 9**

**PREPARATION DATE**

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

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**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

EXTREME NUMBER ONE

**MATERIAL SAFETY DATA SHEET****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

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## 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.

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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:

(X) SKIN

(X) EYE CONTACT

(X) INHALATION

(X) 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:

None normally required. Personal preference suggest gloves, boots and long sleeved clothing.

EYE PROTECTION:

Wear safety glasses/goggles.

VENTILATION:

No special ventilation required for normal conditions.

RESPIRATORY PROTECTION:

None normally required. If mist generated by heating or spraying wear an organic vapour respirator with mist filter.

LEAK & SPILL PROCEDURE:

Contain spill. Use appropriate tools to place spilled material in a container for reclaiming or disposal.

WASTE DISPOSAL:

Dispose of in compliance with local and government regulations.

STORAGE REQUIREMENTS:

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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PAGE 1 OF 4

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**EXTREME SUPER SET**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 1  
FIRE 0  
REACTIVITY 1  
OTHER: DB2 (GLASSES & GLOVES)  
(Skin & Eye Irritant)

### HAZARD RATING:

0 LEAST  
1 SLIGHT  
2 MODERATE  
3 HIGH  
4 EXTREME

## SECTION 1

## PRODUCT IDENTIFICATION

PRODUCT NAME: Extreme Super Set  
CHEMICAL IDENTIFICATION: Proprietary  
MATERIAL USE: Cement Accelerator  
WHMIS CLASSIFICATION: D2B  
WORK PLACE HAZARD: Eye Irritant, Skin Irritant

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: Not Regulated  
PACKAGE GROUP: N/A  
CAS NUMBER: 10043-52-4  
MSDS CODE: N/A

## SECTION 2

## HAZARDOUS INGREDIENTS

INGREDIENT: Calcium Chloride  
PERCENTAGE: 15-30  
CAS NUMBER: 10043-52-4  
LD (50): Oral Rat 1000 Mg/Kg  
LC (50): No Information



EXTREME SUPER SET

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

APPEARANCE AND ODOUR:	Reddish Color Turbid Liquid
DENSITY (SPECIFIC GRAVITY):	1.25 – 1.40
BOILING POINT:	120 - 140° C
MELTING POINT:	N/A
SOLUBILITY:	Liquid
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:	Product Does Not Burn. Use Media Suitable For Surrounding Fire
SPECIAL FIRE FIGHTING PROCEDURES:	Self Contained Breathing Apparatus Required
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Hydrogen Chloride Is A Hazardous Combustion Product At Temperatures In Excess of 1600° C

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

STABILITY (THERMAL, LIGHT, ETC.):	Stable Hygroscopic
INCOMPATIBILITY (CONDITIONS TO AVOID):	Temperatures > 180° C
HAZARDOUS POLYMERIZATION:	Will Not Occur
HAZARDOUS DECOMPOSITION PRODUCTS:	Does Not Decompose

EXTREME SUPER SET

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

## ROUTE OF ENTRY:

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

## SKIN CONTACT:

Wash Off In Flowing Water Or Shower

## EYE CONTACT:

Irrigate With Flowing Water Immediately &amp; Continuously For 15 Minutes. Contact Medical Personnel (If Required)

## INHALATION:

Not Likely To Occur. Remove To Fresh Air

## INGESTION:

Oral Toxicity Considered Low

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

## SKIN PROTECTION:

Avoid Skin Contact. Rubber Gloves Recommended

## EYE PROTECTION:

Avoid Contact With Eyes. Chemical Goggles Recommended

## VENTILATION:

Use Local Exhaust Ventilation

## RESPIRATORY PROTECTION:

In Misty Atmospheres, Use An Approved Mist Respirator

## LEAK &amp; SPILL PROCEDURE:

Contain Spill. Avoid Contamination Of Drinking Water. Small Losses Not Expected To Be Harmful To The Environment.

## WASTE DISPOSAL:

Do Not Dump Into Sewers, On The Ground Or Into Any Body Of Water. Dispose Of In Compliance With All Federal, Provincial &amp; Local Laws &amp; Regulations.

## STORAGE REQUIREMENTS:

Keep Container Tightly Closed. Store In A Cool Dry Place.

EXTREME SUPER SET

**MATERIAL SAFETY DATA SHEET**

**SECTION 8**

**FIRST AID MEASURES**

SKIN: Wash Off In Flowing Water Or Shower

EYE: Irrigate With Flowing Water Immediately & Continuously For 15 Minutes. Contact Medical Personnel (If Required)

INHALATION: Not Likely To Occur. Remove To Fresh Air. Consult Physician.

INGESTION: Oral Toxicity Considered Low. Do Not Induce Vomiting. Give Large Amounts Of Water Or Milk If Available And Transport To Medical Facility.

**SECTION 9**

**PREPARATION DATE**

DATE ISSUED: AUGUST 20, 2007

DATE REVISED: JANUARY 01, 2012

BY: PRODUCT SAFETY COMMITTEE

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**EXTREME SUPER TROL**

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**PAGE 1 OF 4**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 0  
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 TROL  
CHEMICAL IDENTIFICATION: Semi Synthetic Cellulose  
MATERIAL USE: Drilling Fluid Additive  
WHMIS CLASSIFICATION: Not Regulated  
WORK PLACE HAZARD: Not Regulated

## 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: No Hazardous Ingredients  
PERCENTAGE: N/A  
CAS NUMBER: N/A  
LD (50):  
LC (50):

## EXTREME SUPER TROL

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

APPEARANCE AND ODOUR:	Free flowing white powder. No appreciable odour.
DENSITY (SPECIFIC GRAVITY):	1.55
BOILING POINT:	N/A
MELTING POINT:	N/A
SOLUBILITY:	Soluble
EVAPORATION RATE: (EE=1):	N/A
VAPOUR PRESSURE: (MM HG):	N/A
VAPOUR DENSITY: (AIR = 1):	N/A

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

FLASHPOINT:	> 350°C
FLAMMABLE LIMIT:	Not determined
AUTO IGNITION TEMP:	No data
EXTINGUISHING MEDIA:	Water, water fog, foam, dry chemical, CO <sub>2</sub>
SPECIAL FIRE FIGHTING PROCEDURES:	No special requirements
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Becomes very slippery when contacted with water.

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

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizing agents and caustic solutions.
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of carbon

EXTREME SUPER TROL

**MATERIAL SAFETY DATA SHEET**

**SECTION 6**

**HEALTH HAZARDS**

ROUTE OF ENTRY:

SKIN                       EYE CONTACT                       INHALATION                       INGESTION

SKIN CONTACT:

EYE CONTACT:

INHALATION:

INGESTION:

Generally not irritating  
Dust may produce some irritation  
Non irritating in low concentrations. High concentrations may cause mechanical irritation of upper respiratory tract.  
Generally no harmful effects. May cause gastric intestinal discomfort.

**SECTION 7**

**PREVENTATIVE MEASURES**

SKIN PROTECTION:

EYE PROTECTION:

VENTILATION:

RESPIRATORY PROTECTION:

LEAK & SPILL PROCEDURE:

WASTE DISPOSAL:

STORAGE REQUIREMENTS:

None normally required.  
Nuisance dust, use goggles.  
No special requirements.  
Nuisance dust, use dust mask.  
Sweep up or vacuum if dry. If wet, pick up with earth or sand.  
Dispose of in compliance with local and government regulations.  
Keep containers closed when not in use. Keep dry, material becomes slippery when wet.

EXTREME SUPER TROL

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

SKIN:	Wash with soap and water.
EYE:	Flush with water at least 15 minutes.
INHALATION:	Remove from exposure.
INGESTION:	Induce vomiting, give 2 glasses of water. If adverse symptoms develop 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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**EXTREME SUPER-G**

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

**PAGE 1 OF 4**

## WHMIS HAZARD INDEX:

### DEGREE OF HAZARD:

HEALTH 0  
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  
CHEMICAL IDENTIFICATION: Galactomanin  
MATERIAL USE: Drilling mud additive  
WHMIS CLASSIFICATION: Not a controlled product under WHMIS  
WORK PLACE HAZARD: Not applicable

## TRANSPORTATION OF DANGEROUS GOODS (TDGR)

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

## SECTION 2

## HAZARDOUS INGREDIENTS

INGREDIENT: No hazardous ingredients  
PERCENTAGE:  
CAS NUMBER:  
LD (50):  
LC (50):



## EXTREME SUPER-G

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

APPEARANCE AND ODOUR:	Free flowing white powder. No appreciable odour.
DENSITY (SPECIFIC GRAVITY):	<1.2
BOILING POINT:	Not applicable
MELTING POINT:	Not applicable
SOLUBILITY:	Forms colloidal suspension/slurry. pH: 6.8-7.5 (1% slurry)
EVAPORATION RATE: (EE=1):	Not applicable
VAPOUR PRESSURE: (MM HG):	Not applicable
VAPOUR DENSITY: (AIR = 1):	Not applicable

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

FLASHPOINT:	Not determined
FLAMMABLE LIMIT:	Not determined
AUTO IGNITION TEMP:	Not determined
EXTINGUISHING MEDIA:	Water, water fog, foam, chemical, CO2
SPECIAL FIRE FIGHTING PROCEDURES:	None
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Material becomes very slippery when contacted with water

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

STABILITY (THERMAL, LIGHT, ETC.):	Stable
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizing agents and caustic solutions
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon dioxide, carbon monoxide

## EXTREME SUPER-G

## MATERIAL SAFETY DATA SHEET

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

## ROUTE OF ENTRY:

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

## SKIN CONTACT:

Generally not irritating

## EYE CONTACT:

Dust may produce some irritation

## INHALATION:

Non irritating in low concentrations

## INGESTION:

Generally no harmful effects. May cause gastric intestinal discomfort.

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

## SKIN PROTECTION:

No special requirements

## EYE PROTECTION:

Suggest goggles - nuisance dust

## VENTILATION:

No special requirements

## RESPIRATORY PROTECTION:

Suggest dust mask - nuisance dust

## LEAK &amp; SPILL PROCEDURE:

Vacuum or sweep up if dry. If wet, pick up with dry material such as sand or dirt. Avoid flushing with water, as material may become extremely slippery.

## WASTE DISPOSAL:

Dispose of material in accordance with local ordinances. Landfill is suggested.

## STORAGE REQUIREMENTS:

Keep containers closed when not in use. Keep dry; material becomes slippery when wet.

**EXTREME SUPER-G**

**MATERIAL SAFETY DATA SHEET**

**SECTION 8**

**FIRST AID MEASURES**

SKIN:	Wash with soap and water
EYE:	Flush with water at least 15 minutes.
INHALATION:	Remove from exposure.
INGESTION:	Induce vomiting, give 2 glasses of water. If adverse symptoms develop seek medical attention.

**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 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

**MATERIAL SAFETY DATA SHEET****EXTREME SUPER-G BLUE****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>

**MATERIAL SAFETY DATA SHEET****EXTREME SUPER-G BLUE****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

**MATERIAL SAFETY DATA SHEET**

**EXTREME SUPER-G BLUE**

**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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# MATERIAL SAFETY DATA SHEET



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PAGE 1 OF 4

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

**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 6HEALTH 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 7PREVENTATIVE 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

**MATERIAL SAFETY DATA SHEET****EXTREME SUPER-G GOLD****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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**EXTREME TORQ-EEZ**

**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 TORQ-EEZ  
CHEMICAL IDENTIFICATION: Proprietary  
MATERIAL USE: Drilling Fluid Lubricant  
WHMIS CLASSIFICATION: Non Hazardous  
WORK PLACE HAZARD: Not Available

### TRANSPORTATION OF DANGEROUS GOODS (TDGR)

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

## SECTION 2

### HAZARDOUS INGREDIENTS

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

## EXTREME TORQ-EEZ

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

APPEARANCE AND ODOUR:	Amber liquid with mild odour
DENSITY (SPECIFIC GRAVITY):	1.0
BOILING POINT:	100°C
MELTING POINT:	Not Determined
SOLUBILITY:	Complete
EVAPORATION RATE: (EE=1):	Not Available
VAPOUR PRESSURE: (MM HG):	Not Available
VAPOUR DENSITY: (AIR = 1):	Not Available
pH:	9.0 - 10.0

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

FLASHPOINT:	N/A
FLAMMABLE LIMIT:	Aqueous Mixture - Non Flammable
AUTO IGNITION TEMP:	Not Determined
EXTINGUISHING MEDIA:	Dry Chemical, Foam CO <sub>2</sub> , Water Spray
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):	Oxidizing Agents
HAZARDOUS POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	N/A

**MATERIAL SAFETY DATA SHEET****EXTREME TORQ-EEZ****SECTION 6****HEALTH HAZARDS**

## ROUTE OF ENTRY:

 SKIN EYE CONTACT INHALATION INGESTION

## SKIN CONTACT:

## EYE CONTACT:

## INHALATION:

## INGESTION:

Prolonged contact may cause skin irritation.

May be irritating to eyes on direct contact.

Not expected to present a hazard at ambient temperatures.

May cause nausea and vomiting.

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

## SKIN PROTECTION:

## EYE PROTECTION:

## VENTILATION:

## RESPIRATORY PROTECTION:

## LEAK &amp; SPILL PROCEDURE:

## WASTE DISPOSAL:

## STORAGE REQUIREMENTS:

Impervious gloves, protective clothing as required.

Goggles

10 Changes per hour

None normally required

Dam to prevent spreading. Soak up with absorbent material. Dispose of with solid waste.

Dispose of in compliance with government regulation and local requirements.

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

**EXTREME TORQ-EEZ**

**MATERIAL SAFETY DATA SHEET**

**SECTION 8**

**FIRST AID MEASURES**

SKIN:	Wash thoroughly with soap and water.
EYE:	Flush with water for at least 15 minutes. Seek medical attention.
INHALATION:	No expected problems due to low volatility.
INGESTION:	Induce vomiting. Give two glasses of water. Consult a physician at once.

**SECTION 9**

**PREPARATION DATE**

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BY:	PRODUCT SAFETY COMMITTEE

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## **Appendix D: Brief Summary of Plan Changes and Updates**

### **Spill Contingency Plan Resubmission July 2018**

- Updated references to AANDC Inspectors as GNWT Department of Lands Inspector.
- Updated reporting procedures to include making a reasonable effort to inform public that may be adversely affected. pp 11, 17