

**Platinum Group Metals Ltd. ('Platinum Group')
Exploration Operations Document for the Northwest
Territories**

**SPILL CONTINGENCY PLAN
for
Material Spills in Exploration Camps
and Drilling Operations**

LUP W2015C0008

v2. February 2016

Spill Contingency Plan

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1) Introduction and Project Details

Platinum Group Metals Ltd. has established this Spill Contingency plan to cover its activities during the proposed exploration and diamond drilling program on the "Providence Ni-Cu-PGE" property. 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 fuel supply is via 205 liter fuel drums flown in by float and ski equipped aircraft to the storage site at camp. The drilling and surface exploration Crew will be housed at the Credit Lake exploration camp (LUP W2015C0008 held by Platinum Group).

This Plan was prepared and approved by Platinum Group. Additional information or copies are available from Platinum Group Metals Ltd.

Company Name and Mailing address

Platinum Group Metals Ltd.
Mailing address:
Suite 788, 550 Burrard Street
Bentall 5
Vancouver, BC
V6C 2B5 Canada

- i) Effective date of spill contingency plan: February 19, 2016**
- ii) Last revisions to spill contingency plan: July, 2015**
- iii) Distribution List**

The plan and the most recent revisions have been distributed to:

C. Ambrose	Manager, Resource Management (Inspector), Department of Lands, Government of the Northwest Territories
Ellisa Berril	We'keezhi Land and Water Board
R.M. Jones	President, Platinum Group Metals Ltd.
R. van Egmond	Consultant Project Management, Platinum Group Metals Ltd.

iv) Purpose and Scope

The purpose of Platinum Group's Contingency Plan is to provide an action plan for potential spill events that might occur at the Exploration activity sites and Credit Lake Exploration Camp. The Plan addresses and mitigates any unintentional releases 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.

No bulk storage is being used. The numbers will vary as drums are used and more are flown in. Empty Drums are to be flown out. These numbers are seen as maximums.

The program will be conducted over the space of 6 weeks usually in the winter/spring and summer ending October. At the end of the program the facility will be closed and returned to its natural state. The actual timing is not certain of the next drilling program however the camp use portion of the permit may be utilized under 3rd party use for nearby exploration programs. The spill contingency plan will be reinstated and reviewed each time field crews are present.

v) Company environmental policy

Platinum Group has been effectively working in the NWT for several years. 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 Platinum Group's commitment to the concept of sustainable development and the protection of the environment and human health. Platinum Group'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 Platinum Group site managers and site contractors working on all Platinum Group properties during on-site orientation sessions. This plan is also in force and distributed to any 3rd party users of the Credit Lake Camp working on other projects. 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. Platinum Group is committed to keeping personnel up to date on the latest technologies and spill response methods.

vi) Project Description

Platinum Group has a small area of interest, on the south shore of Destiffany Lake. This area lies approximately 11 kilometers northwest of the Credit Lake camp. The primary mineral target will be Nickel, Copper and Platinum Group Elements. Historical exploration results have indicated a very good potential in the area of interest. The Credit Lake camp will be used as a staging area for all work sites activities.

Platinum Group Metals Ltd. intends to conduct ongoing exploration and test previously identified targets while continuing to identify new targets. Data collection includes ground geophysical surveys, gravity surveys, electro-magnetic surveys, and small-core diamond drilling. A Helicopter will transport crews between camp and work sites.

vii) Site Description

Credit Lake camp is located at: 111° 40' 27.48" W, 64°31', 32.16" N. It is a remote area with no adjacent communities or inhabitants. The fuel cache at Credit Lake is located at the camp (Max of approximately 80 drums (205L) Jet A, 80 drums (205L) diesel, 6 drums (205L) gasoline).

The Platinum Group property and drilling area is centered on coordinates are: 111°48', 35" W, 64° 36' 40" N,

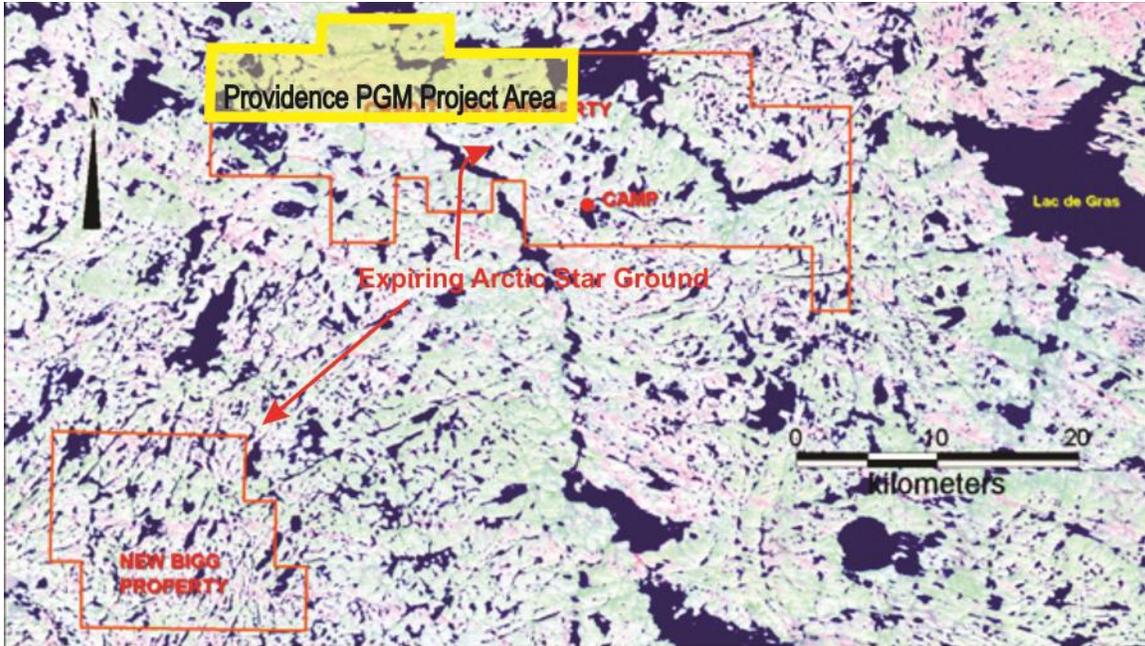


Figure 1: Platinum Group property outline in Yellow with Credit Lake Camp

ix) List of hazardous materials on site

All fuel is transported by air from Yellowknife via fixed wing aircraft. 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. 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.

The following describes the maximum number of drums planned to be stored at the camp, at >100m distance from any water body. The drummed fuel will be transported to the drill activities on an as needed basis.

- 80 205L Diesel Drums, total volume
- 80 205L Jet Fuel Drums, total volume
- 10 205L Gasoline Drums, total volume
- 20 100lbs Propane bottles.

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 Land Use Permit conditions.

No bulk storage is being used. The numbers will vary as drums are used and replaced. Waste oil will be removed to Yellowknife for disposal at an approved disposal site. Empty Drums and any minor remnant content will be flown out on available backhauls.

These numbers are seen as maximums. Generally the numbers will be less.

Material	Storage Container	Normally On-site	Maximum On-Site	Storage Location and Uses
<u>Diesel Fuel</u> CREDIT LAKE	205L drums	4100L (20 drums)	16400L (80 drums)	Diesel is flown in on an as-needed basis. Sleep tents, drill, generator, tracked vehicles, incinerator all require diesel.
Drill Site	205L drums	410 L (2 drums)	615 L (4 drums)	At present time there is no diesel on site. Diesel fuel will be mobilized once a drill program has been planned (potentially spring 2013)
<u>Jet B Fuel</u> CREDIT LAKE	205L drums	4100L (20 drums)	16400L (80 drums)	Jet A is flown in on an as-needed basis. Depending on how much helicopter flying is anticipated, the number of drums required for the season is calculated and ordered at the beginning of the season.
Drill Site	205L drums	820 L (4 drums)	1230 L (6 drums)	Jet A will be mobilized once a drill program has been planned (potentially spring 2013)
<u>Gasoline</u> CREDIT LAKE	205L drums	1025 L (4 drums)	1435 L (8 drums)	Snowmobiles require gasoline. It is also flown in on an as-needed basis.
Drill Site	205L drums	205 L (1 drum)	205 L (2 drums)	Gasoline will be present in minimal quantities during geophysical surveying and during a drill program.
<u>Propane</u> CREDIT LAKE	100 Lb. cylinders	12 cylinders	12 cylinders	Kitchen appliances, portable heaters at drill, heat for waterline and in camp run on propane.
Drill Site	100 Lb. cylinders	5 cylinders	5 cylinders	Propane will be on site. It is used to heat the water line.

Any other hazardous materials on site will be stored indoors (inside drill shack). 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.

Motorized vehicles include 2 snow mobiles and 1 tracked vehicle. A drill rig is on-site during spring and or summer months (March-May; July-August). There are 2 electric fuel pumps on site as well as 2 hand pumps; 1 for diesel and 1 for Jet B fuel.

A one barrel (205L) semi ridged portable containment liner is put under drums being used for refilling to prevent spills onto the ground or snow.

Buildings containing hazardous materials are >100m from any water body. Fuel storage is >100m from any water body.

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

x) Preventative Measures and Training

Platinum Group is committed to leaving the least possible footprint on the environment. For this, training and emergency planning, including adequate training of contractors and staff, are of utmost importance. Below are guidelines implemented for the prevention of spills and the risk assessment associated with hazardous materials. Spill kit is located at the Credit Lake camp beside the fuel cache and outside of the generator shack.

Training of spill response procedures and notification of the location of spill response kits and equipment will be given to all workers on site prior to the commencement of work. The Camp Supervisor will be familiar with the procedures and ensure they are displayed in the main kitchen area for all to review. A spill response meeting will be held at the beginning of the program to ensure the proper procedures and reporting are followed and to train people so that there is no delay to responding to a spill. This is the best method to mitigate the amount spilled and allow for a rapid clean up.

xi) Additional Copies

A map of fuel coordinates and a copy of the plan is located inside the camp office. Other copies of the plan are located at Platinum Group's headquarters in Vancouver, BC and with the Land and Water Board. Additional copies of the plan can be obtained by contacting the company directly at the phone number, fax or email presented in section 1 i).

xii) Process for staff in event of spill

If a spill has occurred, a 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 http://www.e-engine.ca/eps_spillreport/.

2) Response Organization

When to activate the plan:

TDGA CLASS	DESCRIPTION	AMOUNT SPILLED	COMMENTS
2.1	Compressed Flammable gas propane	Any amount from a container larger than 100kg	No containers of this size at camp, however any spills are dangerous and should be reported and prevented.
3.1,3.2,3.3	Flammable Liquid	> 100 litres	All spills no matter what size to be treated.
	Other lubricants etc.	>50 litres	As above

When in doubt activate the plan!

The flow chart depicted in Figure 2 identifies the response organization and when applicable their alternates, as well as the chain of command for responding to a spill or release. The duties of various response personnel are summarized, contact information is provided including 24-hour phone numbers for responsible people and the location of communications equipment on site is discussed.

RESPONSE ORGANIZATION CHART

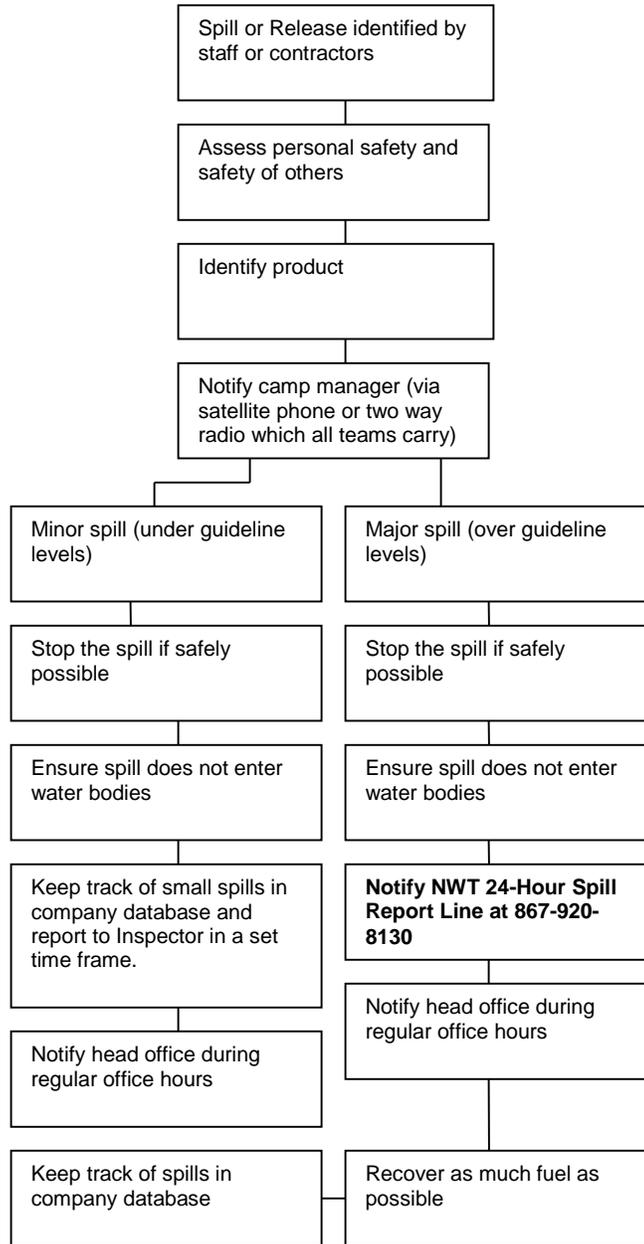


Figure 3: Flow chart of response organization (details of each step will be provided in the procedures for initial actions under Section 3 Action Plan).

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. Any spills less than these quantities do not need to be reported immediately to the spill reporting line. Rather, these minor spills will be tracked and documented by the Platinum Group and submitted to the appropriate authority either immediately upon request or at a pre-determined reporting interval. 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.

Emergency satellite phones and two-way radios are located in the office and with each crew. In the event of a spill involving danger to human life these phones will be used to contact emergency response personnel in Yellowknife.

Following reporting of the spill to the camp manager, he/she will report spills to the NWT 24-Hour Spill Line as necessary. The camp manager will also inform the head office for tracking spills in company databases and notify the head office in the event of media inquiries. The head office number is 604-689-1799.

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

On-Site Project Manager: **TBA** (site supervisor) Telephone:- **TBA**
(Inform GNWT Department of Lands Inspector to inform)

Alternative Project Manager: Rob van Egmond (604-360-6811)
Platinum Group Metals Ltd. Head office for contact info (604-899-5450)

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 Platinum Group management to keep them informed of cleanup activities.

- Obtain additional required resources not available on-site for spill response and cleanup.

- Act as the spokesperson with government agencies as well as the public and the media as appropriate.

- 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 Department of Lands, Government of the North West Territories in Yellowknife.

3) Action Plan

i) 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.

ii) Potential environmental impacts of spill

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 A Fuel

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

Propane

Environmental impacts: Propane may be harmful to wildlife and aquatic life. 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.

iii) Procedures

A) Procedures for initial actions

1. Ensure personal safety and that of others who are on the scene prior to arrival of the Spill Response On-Scene Coordinator.
2. Assess the hazard to persons in the vicinity of the spill.
3. If possible, without further assistance, control any danger to human health.
4. Assess whether the spill can be readily stopped or brought under control.
5. Where safe to do so, stop the flow of the spilled product.
6. Report the spill without delay to the Spill Response On-Scene Coordinator.
7. Resume any action to contain, clean up, or stop the flow of spilled product until the On-Scene Coordinator takes control of the scene.

Platinum Group has implemented the following to minimize the probability of spill occurrence during fuel handling, transfer, or storage operations:

- Immediately cleanup minor spills.
- Conduct regular inspections of fuel barrel storage areas, bung holes and hoses for evidence of leaks.
- Use drip pans and/or oleophilic environmental blankets at all petroleum transfer sites and underneath stationary machinery.
- Train personnel in proper fuel handling and spill response procedures.

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.

3) 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 with waste shipped back to Yellowknife for disposal (see waste management plan).

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) Worst Case Scenarios

Dealing with spilled fuel which exceeds the freeboard of a dyke or barrier would present a possible worst case scenario for the Platinum Group site. To contain the overflow, a trench or collection pit would have to be created downstream of the spill to contain the overflow.

Another worst case scenario would be an excessive spill on water. This may be difficult to contain with the booms present at the site. In this case, an emergency response mobile unit would have to be called in to deal with the spill using appropriate equipment.

D) Procedures for transferring, storing and managing spill related wastes

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

Used sorbent materials are to be placed in plastic bags for future disposal. All materials mentioned in this section are available in the spill kit located at Credit Lake Camp.

E) Procedures for restoring affected areas

Once a spill of reportable size has been contained, Platinum Group will consult with the GNWT Department of Lands or lead agency Inspector assigned to the file to determine the level of cleanup required.

4) Resource Inventory

i) On-site resources

Two large spill kits are located at the camp site, one small kit is onboard the tracked vehicle. As well 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. Plan map in Appendix C below shows location of large spill kit at generator shack close to the fuel laydown and helicopter refueling zone. Smaller kits are carried to fueling locations such as the drill or snow machine refilling area (variable).

Large Kits (2) contain:

Small Kit contains:

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

Government of Northwest Territories Inspector
(867)-767-9188

Environment Canada (Emergency) Yellowknife
(867)-669-4725

GNWT Environmental Protection Division
(867)-873-7654

GNWT Environmental Health Office
(867)-669-8979

Medivac (Yellowknife)
(867)-669-4115

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

Expedite North (Yellowknife)
(867)-873-3157

Environment Canada, National Environment Emergencies Centre (819) 997-2800
(Weather forecasts, spill countermeasures and remediation options)

Department of Fisheries and Oceans (867) 669-4900
Yellowknife Fax: (867) 669-4941

RCMP Yellowknife (867) 669-5100
Yellowknife

Stanton Territorial Hospital (867) 669-4111
Yellowknife

Environmental Department of Ekati (867) 880-2157

Diavik Diamond Mine (867) 766-5400

Snap Lake Diamond Mine (867) 767-8500

5) Training

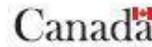
All persons in camp are familiarized with procedures in this document upon arrival in camp.

Drilling contractors and helicopter companies are familiarized with the contents of this document in camp, and details of the Contingency Plan are posted at the drill. The nominated on-site coordinators are responsible for the updating of the contents of the Contingency Plan, including specified reporting requirements. Camp managers are employed at most camps, and form an integral part of spill response planning. The camp manager will be the primary person responsible for physical clean-up at the direction of the on-site coordinator. In the event the coordinator is absent from site, the camp superintendent will act as the cleanup coordinator.

Appendix A: NT-NU Spill Report Form

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND
OTHER HAZARDOUS MATERIALS



NT-NU 24-HOUR SPILL REPORT LINE

Tel: (867) 920-8130 • Fax: (867) 873-6924 • Email: spills@gov.nt.ca

REPORT LINE USE ONLY

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

REPORT LINE USE ONLY

N	Received at Spill Line by:	Position:	Employer:	Location Called:	Report Line Number:
Lead Agency: <input type="checkbox"/> EC <input type="checkbox"/> CCG/TCMSS <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> AANDC <input type="checkbox"/> NEB <input type="checkbox"/> Other: _____			Significance: <input type="checkbox"/> Minor <input type="checkbox"/> Major <input type="checkbox"/> Unknown		File Status: <input type="checkbox"/> Open <input type="checkbox"/> Closed
Agency:		Contact Name:	Contact Name:	Remarks:	
Lead Agency:					
First Support Agency:					
Second Support Agency:					
Third Support Agency:					

Appendix B: Reportable Quantities for NT-NU Spills

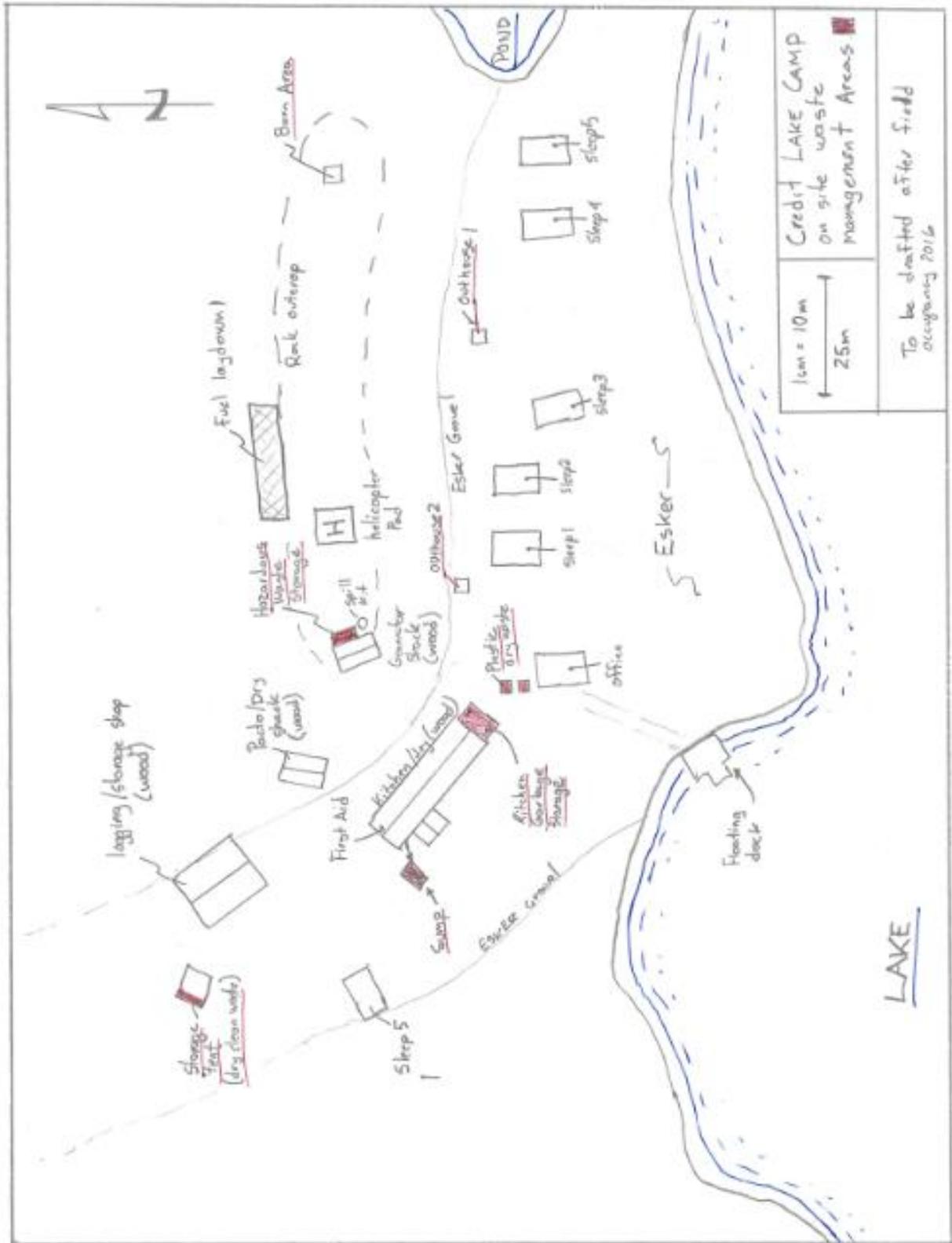
Schedule 1 – Reportable Quantities for NT-NU Spills

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 ₂ 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

(from Government of the Northwest Territories, Department of Lands Guidelines for Spill Contingency Planning)

Appendix C: site map



Appendix D: Material Safety Data Sheets

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).
- Code** : W104, W293
- Material uses** : Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining diesels, marine diesels, MDO and naval distillates may have a higher flash point requirement.
- Manufacturer** : PETRO-CANADA
P.O. Box 2844
150 – 6th Avenue South-West
Calgary, Alberta
T2P 3E3
- In case of emergency** : Petro-Canada: 403-296-3000
Canotec Transportation: 613-996-6666
Poison Control Centre: Consult local telephone directory for emergency number(s).

2. Hazards identification

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

2. Hazards identification

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

See toxicological information (Section 11)

3. Composition/information on ingredients

<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, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Products of combustion** : Carbon oxides (CO, CO₂), nitrogen oxides (NO_x), sulphur oxides (SO_x), sulphur compounds (H₂S), smoke and irritating vapours as products of incomplete combustion.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

5 . Fire-fighting measures

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

6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

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

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Fuels, diesel	ACGIH TLV (United States). Absorbed through skin. TWA: 100 mg/m ³ , (Inhalable fraction and vapour) 8 hour(s).
Fuel oil No. 2	ACGIH TLV (United States). Absorbed through skin. TWA: 100 mg/m ³ , (Inhalable fraction and vapour) 8 hour(s).
Hydrotreated Renewable Diesel	ACGIH TLV (United States). Absorbed through skin. TWA: 200 mg/m ³ 8 hour(s).
Fuel oil No. 1	ACGIH TLV (United States). Absorbed through skin. TWA: 200 mg/m ³ 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°C (437°F)
Flammable limits	: Lower: 0.7% Upper: 6%
Colour	: Clear to yellow (This product may be dyed red for taxation purposes).
Odour	: Mild petroleum oil like.
Odour threshold	: Not available.
pH	: Not available.
Boiling/condensation point	: 150 to 371°C (302 to 699.8°F)
Melting/freezing point	: Not available.
Relative density	: 0.80 to 0.88 kg/L @ 15°C (59°F)
Vapour pressure	: 1 kPa (7.5 mm Hg) @ 20°C (68°F).
Vapour density	: 4.5 [Air = 1]
Volatility	: Not available.
Evaporation rate	: Not available.
Viscosity	: Diesel fuel: 1.3 - 4.1 cSt @ 40°C (104°F) Marine Diesel Fuel: 1.3 - 4.4 cSt @ 40°C (104°F)
Pour point	: Not available.
Solubility	: Insoluble in cold water, soluble in non-polar hydrocarbon solvents.

10 . Stability and reactivity

Chemical stability	: The product is stable.
Hazardous polymerisation	: Under normal conditions of storage and use, hazardous polymerisation will not occur.
Materials to avoid	: Reactive with oxidising agents and acids.
Hazardous decomposition products	: May release COx, NOx, SOx, H ₂ 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 Vapour	Rat	>5000 mg/m ³	4 hours
Hydrotreated Renewable Diesel	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	>5200 mg/m ³	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

11 . Toxicological information

Conclusion/Summary : Not available.

Carcinogenicity

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

Classification

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

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

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

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

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

14 . Transport information

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

14 . Transport information

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Combustible liquid
Irritating material

Canada

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

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

International regulations

Canada inventory : All components are listed or exempted.

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

Europe inventory : All components are listed or exempted.

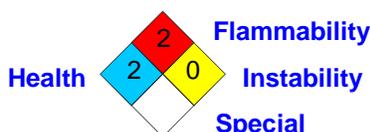
16 . Other information

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

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

Health	2
Flammability	2
Physical hazards	0
Personal protection	H

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



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

Date of printing : 6/28/2013.

Date of issue : 28 June 2013

Date of previous issue : 6/28/2013.

Responsible name : Sécurité de produit - KKB

▣ Indicates information that has changed from previously issued version.

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

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

For Product Safety Information: (905) 804-4752

Notice to reader

16 . Other information

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

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

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
<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	: 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.
<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	: Slightly irritating to the skin.
Eyes	: Slightly irritating to the eyes.
<u>Potential chronic health effects</u>	
Chronic effects	: No known significant effects or critical hazards.

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, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

5 . Fire-fighting measures

- Products of combustion** : Carbon oxides (CO, CO₂), nitrogen oxides (NO_x), sulphur oxides (SO_x), smoke and irritating vapours as products of incomplete combustion.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite. May accumulate in confined spaces.
- Special remarks on explosion hazards** : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire.

6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

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

7 . Handling and storage

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

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Kerosene	ACGIH TLV (United States). Absorbed through skin. TWA: 200 mg/m ³ 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°C (410°F)

Flammable limits : Lower: 0.7%
Upper: 5%

Colour : Clear and colourless.

Odour : Kerosene-like.

Odour threshold : Not available.

pH : Not available.

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

Melting/freezing point : Not available.

Relative density : 0.775 to 0.84 (Water=1)

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

Vapour density : 4.5 [Air = 1]

Volatility : Volatile.

Evaporation rate : Not available.

Viscosity : 1.0 - 1.9 cSt @ 40°C (104°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 CO_x, NO_x, SO_x, 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 ³	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.

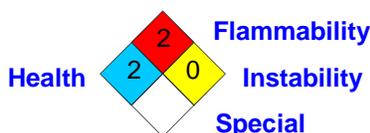
16 . Other information

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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Date of printing : 5/24/2012.

Date of issue : 24 May 2012

Date of previous issue : 5/24/2012.

Responsible name : Product Safety - DSR

Indicates information that has changed from previously issued version.

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

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

For Product Safety Information: (905) 804-4752

Notice to reader

16 . Other information

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

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

Material Safety Data Sheet



GASOLINE

1. Product and company identification

Product name	: GASOLINE	
Synonym	: Unleaded Gasoline, Gasoline, Regular Gasoline, Premium Gasoline, Premium Unleaded Gasoline, Mid Grade Gasoline, Gasoline (Export), Petroleum Naphtha, Alkylate.	
Material uses	: Motor fuels.	
Supplier/Manufacturer	Supplier Federated Co-operatives Limited P. O. Box 1050; 401 - 22nd Street East Saskatoon, SK S7K 3M9 Canada (306) 244-3447	Manufacturer Consumers' Co-operative Refineries Limited P.O. Box 260; 9th Avenue North Regina, SK S4P 3A1 Canada (306) 721-5353
Code	: 695	
Responsible name	: Atrion Regulatory Services, Inc.	
In case of emergency	: CANUTEC (613) 996-6666	

2. Hazards identification

Physical state	: Liquid. [Clear.]
Odor	: Gasoline-like.
Emergency overview	: DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CAUSES EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. Extremely flammable liquid. Vapours can also be irritating to eyes, nose, throat and lungs. May cause headache, nausea, vomiting, dizziness, narcosis, unconsciousness and other central nervous system effects. May be harmful if swallowed. Irritating to eyes and skin. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Contains material that can cause target organ damage. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation	: No known significant effects or critical hazards.
Ingestion	: Harmful if swallowed. Low oral toxicity; vomiting may present an aspiration hazard.
Skin	: Irritating to skin.
Eyes	: Irritating to eyes.

Potential chronic health effects

Chronic effects	: Contains material that can cause target organ damage. Prolonged or repeated skin contact may cause dermatitis, drying, and defatting due to the solvent properties.
Carcinogenicity	: Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure. This product contains benzene which is a known carcinogen. Human health studies show that benzene may cause damage to the blood producing system as well as serious blood disorders, including leukemia. Animal tests suggest prolonged or repeated overexposure may damage the embryo/fetus.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.



2. Hazards identification

- Fertility effects** : No known significant effects or critical hazards.
- Target organs** : Contains material which causes damage to the following organs: blood, upper respiratory tract, skin, bone marrow, central nervous system (CNS), eye, lens or cornea. Lab test studies with rats and mice indicate long term inhalation may cause kidney and liver damage.

Over-exposure signs/symptoms

- Inhalation** : No specific data.
- Ingestion** : No specific data.
- Skin** : Adverse symptoms may include the following:
irritation
redness
Drying of skin.
Defatting to the skin.
- Eyes** : Adverse symptoms may include the following:
pain or irritation
watering
redness

- Medical conditions aggravated by over-exposure** : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3. Composition/information on ingredients

Name	CAS number	%
Gasoline	86290-81-5	60 - 100
Benzene	71-43-2	<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. Do not use an eye ointment. Immediately flush affected eyes with warm, running water for at least 15 minutes while holding eyelids open to ensure thorough flushing. Get medical attention immediately.
- Skin contact** : Remove contaminated clothing, launder before reusing. Wash skin thoroughly with plenty of soap and water. Discard contaminated leather articles. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Give 1/2 glass of milk. 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** : Extremely flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
- Extinguishing media**
- Suitable** : Use dry chemical, CO₂, 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.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
Oxides of sulphur (such as Sulphur dioxide), Hydrogen sulphide.
Hydrocarbons, aromatics, oxides of nitrogen, lead and other trace elements, phenols, polynuclear aromatic hydrocarbons.
- 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.

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 spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor 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 spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with an inert 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. Ground/bond container and receiving equipment.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal. Ground/bond container and receiving equipment.

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. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. 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 grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container. Launder contaminated clothing before reuse. **DO NOT SIPHON BY MOUTH OR USE AS A CLEANING AGENT!**
- Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Canada

Product name

Exposure limits

Gasoline

ACGIH TLV (United States, 1/2007).

TWA: 300 ppm 8 hour(s).

TWA: 890 mg/m³ 8 hour(s).

STEL: 500 ppm 15 minute(s).

STEL: 1480 mg/m³ 15 minute(s).

Benzene

ACGIH TLV (United States, 1/2007). Skin

STEL: 8 mg/m³ 15 minute(s).

STEL: 2.5 ppm 15 minute(s).

TWA: 1.6 mg/m³ 8 hour(s).

TWA: 0.5 ppm 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, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. Lab samples should be handled with adequate ventilation (under a fume hood if necessary). Provide mechanical ventilation for confined spaces.
- 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**
- Eyes** : Splash goggles. Safety glasses with side shields.
- Skin** : Wear chemical resistant clothing if prolonged skin contact is likely.

8 . Exposure controls/personal protection

Respiratory	: A respirator is not needed under normal and intended conditions of product use. Wear an appropriate NIOSH approved respirator if concentration levels exceed the safe exposure limits. If exposure levels are not known, wear an air supplied respirator(SCBA).
Hands	: Nitrile gloves.
Personal protective equipment (Pictograms)	: 
HMIS Code/Personal protective equipment	: x
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	: Liquid. [Clear.]
Flash point	: Closed cup: <-40°C (<-40°F)
Auto-ignition temperature	: 450°C (842°F)
Flammable limits	: Lower: 1.2% Upper: 7.1%
Color	: Amber.
Odor	: Gasoline-like.
Boiling/condensation point	: 25 to 200°C (77 to 392°F)
Specific gravity	: 0.69 to 0.75
Vapor density	: 3 to 4 [Air = 1]
Volatility	: 100% (v/v)
Odor threshold	: <0.25 ppm
Evaporation rate	: 4 (butyl acetate = 1)
VOC	: 100 (%)
Solubility	: Insoluble in the following materials: cold water and hot water.

10 . Stability and reactivity

Stability	: The product is stable. Heat will greatly increase fire and explosion hazards.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas. Avoid exposure - obtain special instructions before use.
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis. Incompatibility with various substances peroxides, Nitric Acid, Sulfuric acid, Chlorine.
Hazardous decomposition products	: Hydrocarbons, aromatics, oxides of nitrogen, lead and other trace elements, phenols, polynuclear aromatic hydrocarbons.
Conditions of reactivity	: Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and shocks and mechanical impacts.



11 . Toxicological information

Acute toxicity

Product/ingredient name	Species	Dose	Result	Exposure
Gasoline	Rat	92 g/kg	LD50 Oral	-
	Rat	13.6 g/kg	LD50 Oral	-
Benzene	Rabbit	>9400 uL/kg	LD50 Dermal	-
	Rat	930 mg/kg	LD50 Oral	-
	Rat	1800 mg/kg	LD50 Oral	-
	Rat	1 mL/kg	LD50 Oral	-
	Rat	6400 mg/kg	LD50 Oral	-

Inhalation : No known significant effects or critical hazards.

Ingestion : Harmful if swallowed. Low oral toxicity; vomiting may present an aspiration hazard.

Skin : Irritating to skin.

Eyes : Irritating to eyes.

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Gasoline	A3	-	-	-	-	-
Benzene	A1	1	-	+	Proven.	+

12 . Ecological information

Environmental effects : Marine pollutant

Aquatic ecotoxicity

Product/ingredient name	Test	Species	Exposure	Result
Benzene	-	Crustaceans	48 hours	Acute EC50 58400 to 82300 ug/L
	-	Daphnia	48 hours	Acute EC50 9230 ug/L
	-	Crustaceans	48 hours	Acute LC50 21000 ug/L
	-	Daphnia	48 hours	Acute LC50 59600 to 80700 ug/L
	-	Fish	96 hours	Acute LC50 5.28 ul/L

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

AERG : 128



14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1203	GASOLINE.	3	II		Marine pollutant
IMDG Class	UN1203	GASOLINE.	3	II		Marine pollutant
IATA-DGR Class	UN1203	GASOLINE	3	II		-

PG* : Packing group

15 . Regulatory information

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).



Canadian lists

- : **CEPA Toxic substances:** The following components are listed: Benzene
- Canadian ARET:** None of the components are listed.
- Canadian NPRI:** The following components are listed: Benzene
- Alberta Designated Substances:** None of the components are listed.
- Ontario Designated Substances:** None of the components are listed.
- Quebec Designated Substances:** None of the components are listed.

Canada inventory (DSL/NDSL)

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

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

International lists

- : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

Label requirements

- : EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CAUSES EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER.

16 . Other information

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

Health	*	2
Fire hazard		4
Physical Hazard		0
Personal protection		X

HAZARD RATINGS

- 4- Extreme
- 3- Serious
- 2- Moderate
- 1- Slight
- 0- Minimal

See section 8 for more detailed information on personal protection.

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

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



References : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

Date of issue : 07/01/2009
Date of previous issue : 06/01/2008
Version : 2

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



D-MO

1. Product and company identification

Product name	: D-MO	
Synonym	: SAE 10W30; 15W40; 20W20; 10W; 30; 40; 50	
Material uses	: Lubrication oil.	
Supplier/Manufacturer	Supplier Federated Co-operatives Limited P. O. Box 1050; 401 - 22nd Street East Saskatoon, SK S7K 3M9 Canada (306) 244-3447	Manufacturer Consumers' Co-operative Refineries Limited P.O. Box 260; 9th Avenue North Regina, SK S4P 3A1 Canada (306) 721-5353
Code	: 189	
Responsible name	: Atrion Regulatory Services, Inc.	
In case of emergency	: CANUTEC (613) 996-6666	

2. Hazards identification

Physical state	: Liquid. [Oily liquid.]
Odor	: Mild.
Emergency overview	: WARNING! CAUSES EYE AND SKIN IRRITATION. Irritating to eyes and skin. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards. Aspiration may occur during swallowing or vomiting resulting in lung damage.
Skin	: Irritating to skin.
Eyes	: Irritating to eyes. Zinc C1-C14 is an eye irritant at concentration of 5% or greater.
Potential chronic health effects	
Chronic effects	: No known significant effects or critical hazards.
Carcinogenicity	: There is no data to indicate any component present at greater than 0.1% that may present a carcinogenic risk.
Mutagenicity	: There are no 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.
Teratogenicity	: There are no 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.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Over-exposure signs/symptoms	
Inhalation	: No specific data.
Ingestion	: No specific data.
Skin	: Adverse symptoms may include the following: irritation redness

2 . Hazards identification

Eyes : Adverse symptoms may include the following:
pain or irritation
watering
redness

Medical conditions aggravated by over-exposure : None known.

See toxicological information (section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	68649-42-3	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** : Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if irritation occurs.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Get medical attention. Remove contaminated clothing, laundry before reusing.
- Inhalation** : Move person to fresh air. If breathing is difficult, give oxygen. Get medical attention.
- Ingestion** : Give 1/2 glass of milk. Give two glasses of water to drink. If spontaneous vomiting occurs, have victim lean forward so that their head is between their knees. Vomiting may result in aspiration into lungs causing chemical pneumonitis. Get medical attention.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

- Flammability of the product** : May be combustible at high temperature. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire. Use water, carbon dioxide, dry chemicals or foam. Cool closed containers exposed to fire with water. Avoid spraying water directly into storage container due to the danger of boilover. Move containers from fire if this can be done without risk.
- Not suitable** : None known.
- Hazardous thermal decomposition products** : Incomplete combustion may produce: aldehydes, hydrogen sulfide, short chain alkyl mercaptans, and oxides of carbon, sulphur, calcium, phosphorus and zinc.
- 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.

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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8). Wear protective equipment including rubber boots.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

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. Do not breathe vapor or mist. Wear appropriate respirator when ventilation is inadequate. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Launder contaminated clothing before reuse.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

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** : Provide mechanical ventilation for confined spaces. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

8 . Exposure controls/personal protection

Eyes	: Splash goggles.
Skin	: Wear chemical resistant clothing if prolonged skin contact is likely.
Respiratory	: A respirator is not needed under normal and intended conditions of product use. Wear an appropriate NIOSH approved respirator if concentration levels exceed the safe exposure limits.
Hands	: Neoprene gloves./ Nitrile gloves.
Personal protective equipment (Pictograms)	: 
HMIS Code/Personal protective equipment	: x
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	: Liquid. [Oily liquid.]
Flash point	: Open cup: >147°C (>296.6°F)
Auto-ignition temperature	: 413°C (775.4°F)
Color	: Brown.
Odor	: Mild.
Melting/freezing point	: -20°C (-4°F)
Specific gravity	: 0.88 to 0.89
Solubility	: Solubility in water: Slight

10 . Stability and reactivity

Stability	: The product is stable.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Increased risk of fire and explosion when combined with strong oxidizer.
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced. Incomplete combustion might produce carbon oxides, nitrogen, sulfur and calcium.

11 . Toxicological information

Acute toxicity	
Inhalation	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards. Aspiration may occur during swallowing or vomiting resulting in lung damage.
Skin	: Irritating to skin.
Eyes	: Irritating to eyes. Zinc C1-C14 is an eye irritant at concentration of 5% or greater.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

AERG : Not applicable.

Regulatory information

TDG / IMDG / IATA : Not regulated.

15 . Regulatory information

Canada

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



Canadian lists : **CEPA Toxic substances:** None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: The following components are listed: Zinc
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

Canada inventory (DSL/NDL) : **Canada inventory:** All components are listed or exempted.

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

International lists : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

Label requirements : CAUSES EYE AND SKIN IRRITATION.

16 . Other information

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

Health	2
Fire hazard	1
Physical Hazard	0
Personal protection	X

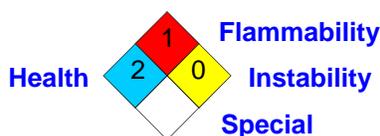
HAZARD RATINGS

- 4- Extreme
- 3- Serious
- 2- Moderate
- 1- Slight
- 0- Minimal

See section 8 for more detailed information on personal protection.

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

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



References : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

Date of issue : 06/02/2009
Date of previous issue : 05/15/2008
Version : 2

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

DURON™ CLASSIC 15W-40



1. Product and company identification

- Product name** : DURON™ CLASSIC 15W-40
- Code** : DUC15
- Material uses** : Duron Classic 15W-40 is an API CH-4 quality heavy duty diesel engine oil suitable for use with diesel fuels ranging is sulfur content up to 0.5% weight. It is backwards compatible with former API categories: CG-4, CF-4, CF-2, and CF. It is also suitable for use with automotive gasoline engine categories API SH and SJ.
- Manufacturer** : Petro-Canada Lubricants Inc.
2310 Lakeshore Road West
Mississauga, Ontario
Canada L5J 1K2
- In case of emergency** : Suncor Energy: 403-296-3000
Canutec Transportation: 613-996-6666
Poison Control Centre: Consult local telephone directory for emergency number(s).

2. Hazards identification

- Physical state** : Viscous liquid.
- Odour** : Mild petroleum oil like.
- WHMIS (Canada)** : Not controlled under WHMIS (Canada).
- OSHA/HCS status** : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
- Emergency overview** : No specific hazard.
- Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.
- Potential acute health effects**
- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.
- Skin** : Slightly irritating to the skin.
- Eyes** : Slightly irritating to the eyes.
- Potential chronic health effects**
- Chronic effects** : No known significant effects or critical hazards.
- Carcinogenicity** : Not listed as carcinogenic by OSHA, NTP or IARC.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.
- Medical conditions aggravated by over-exposure** : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation.

See toxicological information (Section 11)

3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Mixture of severely hydrotreated and hydrocracked base oil (petroleum).	Mixture	-

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

3 . Composition/information on ingredients

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

4 . First-aid measures

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

5 . Fire-fighting measures

- Flammability of the product** : May be combustible at high temperature.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire. Note that water should not be used to extinguish small fires due to risk of spreading the fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Products of combustion** : Carbon oxides (CO, CO₂), sulphur oxides (SO_x), calcium oxides (CaO_x), zinc oxides (ZnO_x), aldehydes, hydrocarbons, smoke and irritating vapours as products of incomplete combustion.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Low fire hazard. This material must be heated before ignition will occur.
- Special remarks on explosion hazards** : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

6 . Accidental release measures

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

6 . Accidental release measures

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

7 . Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Mixture of severely hydrotreated and hydrocracked base oil (petroleum).	ACGIH TLV (United States). Notes: (Mineral oil) TWA: 5 mg/m ³ , (Inhalable fraction) 8 hour(s).

Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Personal protection**
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapour filter

8 . Exposure controls/personal protection

- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Recommended: neoprene, nitrile, polyvinyl alcohol (PVA), Viton®.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

- Physical state** : Viscous liquid.
- Flash point** : Open cup: 245°C (473°F) [Cleveland.]
- Auto-ignition temperature** : 265°C (509°F)
- Flammable limits** : Not available.
- Colour** : Amber.
- Odour** : Mild petroleum oil like.
- Odour threshold** : Not available.
- pH** : Not available.
- Boiling/condensation point** : Not available.
- Melting/freezing point** : Not available.
- Relative density** : 0.867 kg/L @ 15°C (59°F)
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Volatility** : Negligible at ambient temperature and pressure.
- Evaporation rate** : Not available.
- Viscosity** : 105.6 cSt @ 40°C (104°F), 14.4 cSt @ 100°C (212°F), VI=141
- Pour point** : -42°C (-43.6°F)
- Solubility** : Insoluble in water.

10 . Stability and reactivity

- Chemical stability** : The product is stable.
- Hazardous polymerisation** : Under normal conditions of storage and use, hazardous polymerisation will not occur.
- Materials to avoid** : Reactive with oxidising agents, acids, halogens and halogen compounds.
- Hazardous decomposition products** : May release CO_x, SO_x, H₂S, aldehydes, alkyl mercaptans, sulfides, methacrylate monomers, hydrocarbons, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Mixture of severely hydrotreated and hydrocracked base oil (petroleum).	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation	Rat	>5.2 mg/l	4 hours
	Dusts and mists			

11 . Toxicological information

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

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

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

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

13 . Disposal considerations

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

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

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

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	Not regulated.	-	-	-		-
DOT Classification	Not available					-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Not regulated.

Canada

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

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

International regulations

Canada inventory : All components are listed or exempted.

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

Europe inventory : All components are listed or exempted.

International lists :

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

16 . Other information

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

Health	1
Flammability	1
Physical hazards	0
Personal protection	B

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



References

: Available upon request.
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Date of printing

: 2/12/2014.

Date of issue

: 9 May 2013

Date of previous issue

: No previous validation.

Responsible name

: **Product Safety - KKB**

▣ Indicates information that has changed from previously issued version.

16 . Other information

For Copy of (M)SDS

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

Internet: lubricants.petro-canada.ca/msds

Lubricants:

Western Canada, telephone: 1-800-661-1199; fax: 1-800-378-4518

Ontario & Central Canada, telephone: 1-800-268-5850; fax: 1-800-201-6285

Quebec & Eastern Canada, telephone: 1-800-576-1686; fax: 1-800-201-6285

For Product Safety Information: (905) 804-4752

Notice to reader

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

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

Material Safety Data Sheet

PROPANE



1. Product and company identification

- Product name** : PROPANE
- Synonym** : Propane HD-5, Propane commercial, Liquified Petroleum Gas (LPG), C3H8, CGSB Propane Grade 1, CGSB Propane Grade 2, odourized propane, stench propane, automotive propane.
- Code** : W222
- Material uses** : Propane is used as a fuel gas, refrigerant and as a raw material for organic synthesis. It is also used as a laboratory gas. The grade determines the propane content. It is supplied as pressurized liquid in tanks.
- 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** : Gas at room temperature; liquid when stored under pressure.
- Odour** : Propane is an odourless gas. Odourized propane will contain up to 28 g Ethyl Mercaptan per 1000 L of propane.
- WHMIS (Canada)** : Class A: Compressed gas.
Class B-1: Flammable gas.
- OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Emergency overview** : CAUTION!
EXTREMELY FLAMMABLE GAS. MAY CAUSE FLASH FIRE. HIGH PRESSURE GAS.
Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst or explode. Keep away from heat, sparks and flame. Do not puncture or incinerate container. Avoid breathing gas. Avoid contact with skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. At high concentrations, this product can displace oxygen and cause asphyxiation therefore a minimum requirement of 19.5 % oxygen at sea level is recommended.
- Routes of entry** : Dermal contact. Eye contact. Inhalation.
- 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** : As this product is a gas, refer to the inhalation section.
- Skin** : Contact with rapidly expanding gas may cause burns or frostbite.
- Eyes** : Contact with rapidly expanding gas may cause burns or frostbite.
- Potential chronic health effects**
- Chronic effects** : No known significant effects or critical hazards.
- Carcinogenicity** : Not listed as carcinogenic by OSHA, NTP or IARC.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.

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** : Overexposure may lead to cardiac sensitization.

See toxicological information (Section 11)

3 . Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Propane	74-98-6	90 - 100
Propene	115-07-1	1 - 5
Butane	106-97-8	1 - 5
Ethane	74-84-0	1 - 2.5

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. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. 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** : As this product is a gas, refer to the inhalation section.
- 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** : Class I - flammable gas (NFPA).
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance.
- Products of combustion** : Carbon oxides (CO, CO₂), 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** : Extremely flammable in presence of open flames, sparks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces.
- 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. Vapour explosion hazard indoors, outdoors or in sewers. Propane may form explosive mixtures with air.

6 . Accidental release measures

- Personal precautions** : Accidental releases pose a serious fire or explosion hazard. Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. 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. Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. 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. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Ensure all equipment is grounded/bonded.
- SPECIAL PRECAUTIONS: Sludges and tank scale from petroleum storage tanks, trucks, rail cars, and filters/screens may contain naturally occurring radioactive material ("NORM") in the form of radon 226 and it's progeny including lead 210. Similarly, equipment used for the transfer of petroleum product such as pipelines, pumps and compressors, may have detectable levels of radioactive lead on inner surfaces. Workers involved in cleaning, descaling, repair or other maintenance on inner surfaces of such equipment should avoid breathing and ingesting of dust generated from such activities. Similarly, gas freeing of pipelines, pumps, vessels and compressors may put workers at risk of inhalation of radon gas. Suitable codes of practice should be developed for these activities, detailing appropriate occupational hygiene, personal protective equipment and disposal practices.
- Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Ensure the storage containers are grounded/bonded.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Propane	ACGIH TLV (United States). TWA: 1000 ppm 8 hour(s).
Propene	ACGIH TLV (United States). TWA: 500 ppm 8 hour(s).
Butane	ACGIH TLV (United States). TWA: 1000 ppm 8 hour(s).
Ethane	ACGIH TLV (United States). TWA: 1000 ppm 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: NIOSH-approved self-contained breathing apparatus.

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: Wear insulated gloves to prevent frostbite.

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 : Gas at room temperature; liquid when stored under pressure.

Flash point : Closed cup: -104°C (-155.2°F)

Auto-ignition temperature : 450°C (842°F) (NFPA)

Flammable limits : Lower: 2.1% (NFPA)
Upper: 9.5% (NFPA)

Colour : Colourless.

Odour : Propane is an odourless gas. Odourized propane will contain up to 28 g Ethyl Mercaptan per 1000 L of propane.

Odour threshold : Not available.

9 . Physical and chemical properties

pH	: Not available.
Boiling/condensation point	: -42°C (-43.6°F)
Melting/freezing point	: Not available.
Relative density	: Not available.
Vapour pressure	: 1434.9 kPa (10763 mm Hg) @ 38°C (100°F)
Vapour density	: 1.56 [Air = 1]
Volatility	: Volatile.
Evaporation rate	: Not available.
Viscosity	: Not available.
Pour point	: Not available.
Solubility	: Not available.

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 halogenated compounds.
Hazardous decomposition products	: May release CO _x , smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Butane	LC50 Inhalation Gas.	Rat	658000 mg/m ³	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
Propene	A4	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. Empty pressure vessels should be returned to the supplier. 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. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

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	UN1978	PROPANE	2.1	-		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Compressed gas
Flammable gas

Canada

WHMIS (Canada) : Class A: Compressed gas.
Class B-1: Flammable gas.

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.

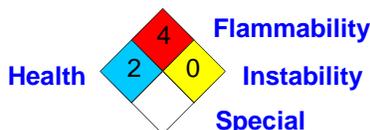
16 . Other information

Label requirements : EXTREMELY FLAMMABLE GAS. MAY CAUSE FLASH FIRE. HIGH PRESSURE GAS.

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

Health	2
Flammability	4
Physical hazards	2
Personal protection	K

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



References : Available upon request.
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Date of printing : 10/24/2013.

Date of issue : 30 March 2012

Date of previous issue : 3/31/2009.

Responsible name : **Product Safety - DSR**

☑ Indicates information that has changed from previously issued version.

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

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

For Product Safety Information: (905) 804-4752

Notice to reader

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



INDUSTRIAL HYDRAULIC OIL

1. Product and company identification

Product name	: INDUSTRIAL HYDRAULIC OIL	
Synonym	: ISO GRADES 22, 32, 46, 68, 100, 150, MV22, HVI 36	
Material uses	: Hydraulic Oil.	
Supplier/Manufacturer	Supplier Federated Co-operatives Limited P. O. Box 1050; 401 - 22nd Street East Saskatoon, SK S7K 3M9 Canada (306) 244-3447	Manufacturer Consumers' Co-operative Refineries Limited P.O. Box 260; 9th Avenue North Regina, SK S4P 3A1 Canada (306) 721-5353
Code	: 184	
Responsible name	: Atrion Regulatory Services, Inc.	
In case of emergency	: CANUTEC (613) 996-6666	

2. Hazards identification

Physical state	: Liquid. [Oily liquid.]
Odor	: Mild.
Emergency overview	: NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED. No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: No known significant effects or critical hazards.
Ingestion	: Low oral toxicity; vomiting may present an aspiration hazard. Vomiting may result in aspiration into lungs causing chemical pneumonitis.
Skin	: No known significant effects or critical hazards.
Eyes	: No known significant effects or critical hazards.
Potential chronic health effects	
Chronic effects	: May cause skin irritation, especially under repeated or prolonged contact or when moisture is present.
Carcinogenicity	: There is no data to indicate any component present at greater than 0.1% that may present a carcinogenic risk.
Mutagenicity	: There are no 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.
Teratogenicity	: There are no 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.
Developmental effects	: There are no 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.
Fertility effects	: No known significant effects or critical hazards.
Over-exposure signs/symptoms	
Inhalation	: No specific data.
Ingestion	: No specific data.
Skin	: No specific data.
Eyes	: No specific data.



2. Hazards identification

Medical conditions aggravated by over-exposure : None known.

See toxicological information (section 11)

3. Composition/information on ingredients

Name	CAS number	%
No hazardous ingredient.		

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 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Wash contaminated skin with soap and water. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
- 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. Seek medical attention.
- Ingestion** : Wash out mouth with water. Give 1/2 glass of milk./Give two glasses of water to drink. Never give anything by mouth to an unconscious person. Do not induce vomiting unless directed to do so by medical personnel. Vomiting may result in aspiration into lungs causing chemical pneumonitis. If spontaneous vomiting occurs, have victim lean forward so that their head is between their knees. Keep victim at rest. Seek medical attention.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

- Flammability of the product** : May form combustible mixtures with air at temperatures at or above the flashpoint. Heat or contact with oxidizing materials will greatly increase fire and explosion hazards. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire. Carbon dioxide, water spray or fog, dry chemical or foam. Cool closed containers exposed to fire with water. Move containers from fire area if this can be done without risk.
- Not suitable** : Do not spray water directly into containers due to the danger of slop over.
- Hazardous thermal decomposition products** : Incomplete combustion may produce: aldehydes and carbon oxides, sulfur oxides, phosphorus oxides and zinc.
- 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.

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 spilled material. Avoid all possible sources of ignition (spark or flame). Avoid breathing vapor or mist. Wear appropriate respirator when ventilation is inadequate. Provide adequate ventilation. Put on appropriate personal protective equipment (see section 8). Wear protective equipment including rubber boots.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Pump up using an explosion-proof pump. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

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. Do not ingest. Avoid contact with eyes, skin and clothing. Wear chemical resistant clothing if prolonged skin contact is likely. Chemical splash goggles. Avoid breathing vapor or mist. Wear appropriate respirator when ventilation is inadequate. Use with adequate ventilation. Wash thoroughly after handling. Launder contaminated clothing before reuse. Keep away from heat, flame, sparks and other ignition sources. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits. Use of mechanical ventilation is recommended.

8 . Exposure controls/personal protection

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

Eyes : Splash goggles. Safety glasses with side shields.

Skin : Wear chemical resistant clothing if prolonged skin contact is likely.

Respiratory : A respirator is not needed under normal and intended conditions of product use. Wear an appropriate NIOSH approved respirator if concentration levels exceed the safe exposure limits.

Hands : Neoprene gloves./ Nitrile gloves.

Personal protective equipment (Pictograms)



HMIS Code/Personal protective equipment : x

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 : Liquid. [Oily liquid.]

Flash point : Open cup: >147°C (>296.6°F)

Auto-ignition temperature : 413°C (775.4°F)

Color : Brown.

Odor : Mild.

Melting/freezing point : -10°C (14°F)

Specific gravity : 0.86

Solubility : Partially soluble in the following materials: cold water and hot water.

10 . Stability and reactivity

Stability : The product is stable.

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

Conditions to avoid : Heat or contact with oxidizing materials will greatly increase fire and explosion hazards.

Materials to avoid : Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Acute toxicity

Inhalation : No known significant effects or critical hazards.

Ingestion : Low oral toxicity; vomiting may present an aspiration hazard. Vomiting may result in aspiration into lungs causing chemical pneumonitis.

Skin : No known significant effects or critical hazards.



11 . Toxicological information

Eyes : No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

AERG : Not applicable.

Regulatory information

TDG / IMDG/ IATA : Not regulated.

15 . Regulatory information

Canada

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

Canadian lists : **CEPA Toxic substances**: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is not listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Canada inventory (DSL/NDL) : **Canada inventory**: All components listed.

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

International lists : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

Label requirements : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

16 . Other information

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

HAZARD RATINGS

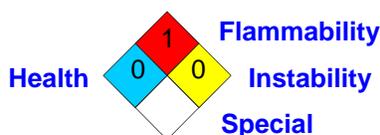
Health	0
Fire hazard	1
Physical Hazard	0
Personal protection	X

4- Extreme
 3- Serious
 2- Moderate
 1- Slight
 0- Minimal

See section 8 for more detailed information on personal protection.

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

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



References : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

Date of issue : 07/23/2009
Date of previous issue : 05/15/2008
Version : 2

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



SONIC ATF

1. Product and company identification

Product name	: SONIC ATF	
Synonym	: SONIC ATF DEXRON III/MERCON; SONIC ATF DEX III	
Material uses	: Automatic transmission fluid.	
Supplier/Manufacturer	: Supplier Federated Co-operatives Limited P. O. Box 1050; 401 - 22nd Street East Saskatoon, SK S7K 3M9 Canada (306) 244-3447	: Manufacturer CHS Inc. P.O. Box 64089 - Mail station 525 St. Paul, MN 55164-0089 (651) 424-8438
Code	: 1221	
Responsible name	: Atrion Regulatory Services, Inc.	
In case of emergency	: CANUTEC (613) 996-6666	

2. Hazards identification

Physical state	: Liquid.
Odor	: Mild.
Emergency overview	: NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED. No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: May cause irritation of the nose and throat.
Ingestion	: May cause nausea and vomiting. Large quantities may effect the central nervous system.
Skin	: May cause skin irritation upon contact.
Eyes	: May cause eye irritation.
Potential chronic health effects	
Chronic effects	: May cause skin irritation, especially under repeated or prolonged contact or when moisture is present.
Carcinogenicity	: There is no data to indicate any component present at greater than 0.1% that may present a carcinogenic risk.
Mutagenicity	: There are no 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.
Teratogenicity	: There are no 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.
Developmental effects	: There are no 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.
Fertility effects	: No known significant effects or critical hazards.
Over-exposure signs/symptoms	
Inhalation	: No specific data.
Ingestion	: No specific data.
Skin	: No specific data.
Eyes	: No specific data.

2. Hazards identification

Medical conditions aggravated by over-exposure : None known.

See toxicological information (section 11)

3. Composition/information on ingredients

Name	CAS number	%
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	60 - 100

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 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Wash contaminated skin with soap and water. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
- 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. Seek medical attention.
- Ingestion** : Wash out mouth with water. Give 1/2 glass of milk./Give two glasses of water to drink. Never give anything by mouth to an unconscious person. Do not induce vomiting unless directed to do so by medical personnel. If spontaneous vomiting occurs, have victim lean forward so that their head is between their knees. Vomiting may result in aspiration into lungs causing chemical pneumonitis. Keep victim at rest. Seek medical attention.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

- Flammability of the product** : May form combustible mixtures with air at temperatures at or above the flashpoint. Heat or contact with oxidizing materials will greatly increase fire and explosion hazards. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire. Carbon dioxide, water spray or fog, dry chemical or foam. Water may cause splattering. A component may float and ignite on the surface of water. Cool closed containers exposed to fire with water. Move containers from fire area if this can be done without risk.
- Not suitable** : Do not spray water directly into containers due to the danger of slop over.
- Hazardous thermal decomposition products** : Incomplete combustion may produce: oxides of magnesium, calcium, nitrogen, sulfur, carbon.
- 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.

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 spilled material. Avoid breathing vapor or mist. Wear appropriate respirator when ventilation is inadequate. Provide adequate ventilation. Put on appropriate personal protective equipment (see section 8). Wear protective equipment including rubber boots. Avoid all possible sources of ignition (spark or flame).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Pump up using an explosion-proof pump. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

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. Do not ingest. Avoid contact with eyes, skin and clothing. Wear chemical resistant clothing if prolonged skin contact is likely. Chemical splash goggles. Avoid breathing vapor or mist. Wear appropriate respirator when ventilation is inadequate. Use only with adequate ventilation. Wash thoroughly after handling. Launder contaminated clothing before reuse. Avoid all possible sources of ignition (spark or flame). Empty containers retain product residue and can be hazardous. Do not reuse container. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Handling temperatures should not exceed 175F (80°C).
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Storage temperatures should not exceed 45°C.

8 . Exposure controls/personal protection

Canada

Product name

Distillates (petroleum), solvent-dewaxed heavy paraffinic

Exposure limits

ACGIH TLV (United States).

TWA: 5 mg/m³ 8 hour(s). Form: Mist

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.

8 . Exposure controls/personal protection

Engineering measures	: No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits. Use of mechanical ventilation is recommended.
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	
Eyes	: Splash goggles. Safety glasses with side shields.
Skin	: Wear chemical resistant clothing if prolonged skin contact is likely. Use chemical aprons, boots.
Respiratory	: A respirator is not needed under normal and intended conditions of product use. Wear an appropriate NIOSH approved respirator if concentration levels exceed the safe exposure limits. If exposure levels are not known, wear an air supplied respirator(SCBA).
Hands	: Nitrile gloves.
Personal protective equipment (Pictograms)	: 
HMIS Code/Personal protective equipment	: x
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	: Liquid.
Flash point	: Closed cup: >193°C (>379.4°F)
Auto-ignition temperature	: >260°C (>500°F)
Color	: Red./ Yellow.
Odor	: Mild.
Specific gravity	: 0.85 to 0.88
Vapor pressure	: <0.13 kPa (<1 mm Hg)
Vapor density	: >1 [Air = 1]
Evaporation rate	: <1 (ether (anhydrous) = 1)
Solubility	: Partially soluble in the following materials: cold water and hot water.

10 . Stability and reactivity

Stability	: The product is stable.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur. Handling temperatures should not exceed 175F (80°C). Storage temperatures should not exceed 45°C.
Conditions to avoid	: Heat or contact with oxidizing materials will greatly increase fire and explosion hazards. Avoid all possible sources of ignition (spark or flame).
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials and acids.



10 . Stability and reactivity

- Hazardous decomposition products** : Smoke, carbon monoxide, aldehydes, hydrogen sulfide and alkyl mercaptans may be released.
- Conditions of reactivity** : Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.
Non-flammable in the presence of the following materials or conditions: heat.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Species	Dose	Result	Exposure
Distillates (petroleum), solvent-dewaxed heavy paraffinic	Rabbit	>5 g/kg	LD50 Dermal	-
	Rat	>5 g/kg	LD50 Oral	-

Inhalation : May cause irritation of the nose and throat.

Ingestion : May cause nausea and vomiting. Large quantities may effect the central nervous system.

Skin : May cause skin irritation upon contact.

Eyes : May cause eye irritation.

12 . Ecological information

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

13 . Disposal considerations

- Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

- AERG** : Not applicable.

Regulatory information

- TDG / IMDG / IATA** : Not regulated.

15 . Regulatory information

Canada

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

Canadian lists : **CEPA Toxic substances**: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: None of the components are listed.
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

Canada inventory (DSL/NDSL) : **Canada inventory**: All components are listed or exempted.

15 . Regulatory information

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

International lists : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

Label requirements : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

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

Health	1
Fire hazard	1
Physical Hazard	0
Personal protection	X

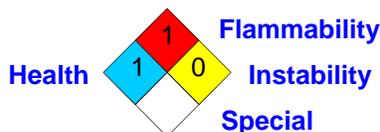
HAZARD RATINGS

4- Extreme
3- Serious
2- Moderate
1- Slight
0- Minimal

See section 8 for more detailed information on personal protection.

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

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



References : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

Date of issue : 08/04/2009

Date of previous issue : 05/15/2008

Version : 2

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



SONIC BLUE GUARD

1. Product and company identification

Product name	: SONIC BLUE GUARD	
Synonym	: GREASE, MULTIPURPOSE	
Material uses	: Multi-purpose grease.	
Supplier/Manufacturer	: Supplier Federated Co-operatives Limited P. O. Box 1050; 401 - 22nd Street East Saskatoon, SK S7K 3M9 Canada (306) 244-3447	Manufacturer CHS Inc. P.O. Box 64089, Mail station 525 St. Paul, MN 55164-0089 (651) 355-8438
Code	: 1696	
Responsible name	: Atrion Regulatory Services, Inc.	
In case of emergency	: CANUTEC (613) 996-6666	

2. Hazards identification

Physical state	: Solid. [Semi-solid gel.]
Odor	: Mild. Petroleum.
Emergency overview	: WARNING! CAUSES EYE AND SKIN IRRITATION. Irritating to eyes and skin. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.
Skin	: Irritating to skin.
Eyes	: Irritating to eyes.
Potential chronic health effects	
Chronic effects	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Over-exposure signs/symptoms	
Inhalation	: No specific data.
Ingestion	: No specific data.
Skin	: Adverse symptoms may include the following: irritation redness
Eyes	: Adverse symptoms may include the following: pain or irritation watering redness
Medical conditions aggravated by over-exposure	: None known.



2. Hazards identification

See toxicological information (section 11)

3. Composition/information on ingredients

Name	CAS number	%
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	60 - 100

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. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Get medical attention.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention.
- Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.
- 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** : No specific fire or explosion hazard.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides
- 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.

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 spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

6 . Accidental release measures

- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. 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. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

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

- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

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

Personal protection

- Eyes** : Splash goggles.
- Skin** : Wear chemical resistant clothing if prolonged skin contact is likely.
- Respiratory** : A respirator is not needed under normal and intended conditions of product use.
- Hands** : Nitrile gloves.

Personal protective equipment (Pictograms)



- HMIS Code/Personal protective equipment** : x
- 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	: Solid. [Semi-solid gel.]
Flash point	: Closed cup: >204°C (>399.2°F)
Auto-ignition temperature	: 371°C (699.8°F)
Color	: Blue.
Odor	: Mild. Petroleum.
Specific gravity	: 0.94
Vapor pressure	: <0.13 kPa (<1 mm Hg)
Evaporation rate	: <1 (Ether (anhydrous). = 1)
Solubility	: Insoluble in the following materials: cold water and hot water.

10 . Stability and reactivity

Stability	: The product is stable.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: No specific data.
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Conditions of reactivity	: Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge. Non-flammable in the presence of the following materials or conditions: heat.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Species	Dose	Result	Exposure
Distillates (petroleum), hydrotreated heavy naphthenic	Rabbit	>5 g/kg	LD50 Dermal	-
	Rat	>5 g/kg	LD50 Oral	-

Inhalation	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.
Skin	: Irritating to skin.
Eyes	: Irritating to eyes.

12 . Ecological information

Environmental effects	: No known significant effects or critical hazards.
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13 . Disposal considerations

Waste disposal	: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
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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

- AERG** : Not applicable.
- Regulatory information**
- TDG / IMDG/ IATA** : Not regulated.

15 . Regulatory information

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



- Canadian lists** :
- CEPA Toxic substances:** None of the components are listed.
 - Canadian ARET:** None of the components are listed.
 - Canadian NPRI:** None of the components are listed.
 - Alberta Designated Substances:** None of the components are listed.
 - Ontario Designated Substances:** None of the components are listed.
 - Quebec Designated Substances:** None of the components are listed.

- Canada inventory (DSL/NDL)** : **Canada inventory:** All components are listed or exempted.

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

- International lists** : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

- Label requirements** : CAUSES EYE AND SKIN IRRITATION.

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

Health	2
Fire hazard	1
Physical Hazard	0
Personal protection	X

HAZARD RATINGS

- 4- Extreme
- 3- Serious
- 2- Moderate
- 1- Slight
- 0- Minimal

See section 8 for more detailed information on personal protection.

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

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



- References** :
- ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987.
 - Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

- Date of issue** : 09/01/2008
- Version** : 1



16 . Other information

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



SONIC MOLY GUARD SL

1. Product and company identification

Product name	: SONIC MOLY GUARD SL	
Synonym	: GREASE, MULTIPURPOSE	
Material uses	: Multi-purpose grease.	
Supplier/Manufacturer	: Supplier Federated Co-operatives Limited P. O. Box 1050; 401 - 22nd Street East Saskatoon, SK S7K 3M9 Canada (306) 244-3447	Manufacturer CHS Inc. P.O. Box 64089, Mail station 525 St. Paul, MN 55164-0089 (651) 355-8438
Code	: 1761	
Responsible name	: Atrion Regulatory Services, Inc.	
In case of emergency	: CANUTEC (613) 996-6666	

2. Hazards identification

Physical state	: Liquid. [Semi-solid gel.]
Odor	: Mild. Petroleum.
Emergency overview	: MAY CAUSE EYE AND SKIN IRRITATION. Slightly irritating to the eyes and skin. Avoid breathing vapor or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: May cause respiratory tract irritation.
Ingestion	: Exposure can cause nausea, headache and vomiting.
Skin	: Slightly irritating to the skin.
Eyes	: Slightly irritating to the eyes.
Potential chronic health effects	
Chronic effects	: Prolonged or repeated skin exposure may cause dermatitis.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Over-exposure signs/symptoms	
Inhalation	: Inhalation of high vapor concentrations may have results ranging from dizziness and headaches to unconsciousness. Can cause central nervous system (CNS) depression.
Ingestion	: No specific data.
Skin	: Prolonged or repeated skin contact may cause dermatitis, drying, and defatting due to the solvent properties. Adverse symptoms may include the following: irritation redness
Eyes	: Adverse symptoms may include the following: irritation watering redness

2. Hazards identification

Medical conditions aggravated by over-exposure : Respiratory conditions, dermatitis.

See toxicological information (section 11)

3. Composition/information on ingredients

Name	CAS number	%
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	75-95
Lithium 12-hydroxystearate	7620-77-1	>1

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 20 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 20 minutes while removing contaminated clothing and shoes. 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. Keep person warm and at rest. 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** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire. Use dry chemical, CO₂, water spray (fog) or foam. Cool containers with water spray, avoid getting water into container. Use water spray to cool fire exposed surfaces and to protect personnel.
- Not suitable** : No special precaution is required.
- 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.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials: carbon dioxide, carbon monoxide, metal oxide/oxides, nitrogen, sulfur, molybdenum, boron, lithium, potassium, aldehydes, hydrogen sulfide, alkyl mercaptans.
- 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.

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 spilled material. Avoid breathing vapor 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 spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

- Handling** : Handling temperature: < 80°C. 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. Do not breathe vapor or mist. Wear appropriate respirator when ventilation is inadequate. Do not ingest. Avoid contact with eyes, skin and clothing. Do not wear watches, rings or similar apparel that could entrap the material next to the skin. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Open container carefully and only well ventilated areas. Wear appropriate respiratory protection. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Odorless and toxic fumes may form from decomposition of this product if stored at excessive temperatures for extended periods of time. Storage temperature: < 45°C. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

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** : Provide mechanical ventilation for confined spaces. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

8 . Exposure controls/personal protection

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	
Eyes	: Splash goggles.
Skin	: Wear chemical resistant clothing if prolonged skin contact is likely.
Respiratory	: A respirator is not needed under normal and intended conditions of product use. Wear an appropriate NIOSH approved respirator if concentration levels exceed the safe exposure limits. Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.
Hands	: Nitrile gloves.
Personal protective equipment (Pictograms)	: 
HMIS Code/Personal protective equipment	: x
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	: Liquid. [Semi-solid gel.]
Flash point	: Closed cup: >204°C (>399.2°F)
Auto-ignition temperature	: 371.1°C (700°F)
Color	: Gray./ Black.
Odor	: Mild. Petroleum.
Specific gravity	: 0.94
Volatility	: < 1% (v/v)
Evaporation rate	: <1 (ether (anhydrous) = 1)
VOC	: 1 (%)
Solubility	: Insoluble in the following materials: cold water and hot water.

10 . Stability and reactivity

Stability	: The product is stable.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: Increased risk of fire and explosion when combined with strong oxidizer.
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials, acids
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced. Decomposition products may include the following materials: Hydrogen Sulfide, smoke, carbon monoxide, sulfur oxides, aldehydes, molybdenum, boron, lithium, potassium oxides.
Conditions of reactivity	: Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge. Non-flammable in the presence of the following materials or conditions: heat.

11 . Toxicological information

Acute toxicity

- Inhalation** : May cause respiratory tract irritation.
- Ingestion** : Exposure can cause nausea, headache and vomiting.
- Skin** : Slightly irritating to the skin.
- Eyes** : Slightly irritating to the eyes.

12 . Ecological information

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

13 . Disposal considerations

- Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

- AERG** : Not applicable.
- Regulatory information**
TDG / IMDG/ IATA : Not regulated.

15 . Regulatory information

Canada

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



- Canadian lists** : **CEPA Toxic substances:** None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: None of the components are listed.
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

- Canada inventory (DSL/NDSL)** : **Canada inventory:** All components are listed or exempted.

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

- International lists** : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

Material Safety Data Sheet



TRANSHYDRAULIC FLUID

1. Product and company identification

Product name	: TRANSHYDRAULIC FLUID	
Synonym	: (NO DYE)	
Material uses	: Transmission and hydraulic oil.	
Supplier/Manufacturer	: Supplier Consumers' Co-operative Refineries Limited P.O. Box 260; 9th Avenue North Regina, SK S4P 3A1 Canada (306) 721-5353	Manufacturer Consumers' Co-operative Refineries Limited P.O. Box 260; 9th Avenue North Regina, SK S4P 3A1 Canada (306) 721-5353
Code	: 62	
Responsible name	: Atrion Regulatory Services, Inc.	
In case of emergency	: CANUTEC (613) 996-6666	

2. Hazards identification

Physical state	: Liquid. [Oily liquid.]
Odor	: Mild.
Emergency overview	: WARNING! CAUSES EYE AND SKIN IRRITATION. Irritating to eyes and skin. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: Aspiration may occur during swallowing or vomiting resulting in lung damage.
Ingestion	: May be harmful if swallowed.
Skin	: Irritating to skin. Repeated and prolonged contact with this material may aggravate medical conditions for person having pre-existing skin disorders.
Eyes	: Irritating to eyes. Zinc C1-C14 is an eye irritant at concentration of 5% or greater.
Potential chronic health effects	
Chronic effects	: No known significant effects or critical hazards.
Carcinogenicity	: There is no data to indicate any component present at greater than 0.1% that may present a carcinogenic risk.
Mutagenicity	: There is no data to indicate any component present at greater than 0.1% that may cause mutagenic effects.
Teratogenicity	: There is no data to indicate any component present at greater than 0.1% that may cause teratogenic effects.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Over-exposure signs/symptoms	
Inhalation	: No specific data.
Ingestion	: No specific data.
Skin	: Adverse symptoms may include the following: irritation redness
Eyes	: Adverse symptoms may include the following: pain or irritation watering redness



2 . Hazards identification

Medical conditions aggravated by over-exposure : None known.

See toxicological information (section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Zinc Alkyldithiophosphate	68649-42-3	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** : Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Remove contaminated clothing and shoes. Launder contaminated clothing before reuse.
- Inhalation** : Move exposed person to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately.
- Ingestion** : Give 1/2 glass of milk. / Give two glasses of water to drink.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

- Flammability of the product** : May be combustible at high temperature. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Move containers from fire area if this can be done without risk.
- Extinguishing media**
- Suitable** : Carbon dioxide, water spray or fog, dry chemical or foam. Use water spray to cool fire exposed containers and disperse vapours from leaks/ spills that have not been ignited.
- Not suitable** : Avoid spraying water directly into storage container due to the danger of boilover.
- Hazardous thermal decomposition products** : Incomplete combustion might produce carbon oxides, nitrogen, sulfur and calcium.
- 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.

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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8). Wear protective equipment including rubber boots.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**

6 . Accidental release measures

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

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. Do not breathe vapor or mist. Wear appropriate respirator when ventilation is inadequate. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Launder contaminated clothing before reuse.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

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 of mechanical ventilation is recommended. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Personal protection**
- Eyes** : Splash goggles.
- Skin** : Wear chemical resistant clothing if prolonged skin contact is likely.
- Respiratory** : A respirator is not needed under normal and intended conditions of product use. Wear an appropriate NIOSH approved respirator if concentration levels exceed the safe exposure limits.
- Hands** : Neoprene gloves./ Nitrile gloves.
- Personal protective equipment (Pictograms)** :

8 . Exposure controls/personal protection



HMIS Code/Personal protective equipment : x

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 : Liquid. [Oily liquid.]
Flash point : Open cup: >148°C (>298.4°F)
Auto-ignition temperature : 413°C (775.4°F)
Color : Brown.
Odor : Mild.
Melting/freezing point : -40°C (-40°F)
Specific gravity : 0.88
Vapor pressure : Not available.
Solubility : Slightly soluble in the following materials: cold water and hot water.

10 . Stability and reactivity

Stability : The product is stable.
Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid : Increased risk of fire and explosion when combined with strong oxidizer.
Materials to avoid : Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced. Incomplete combustion might produce carbon oxides, nitrogen, sulfur and calcium.

11 . Toxicological information

Acute toxicity
Inhalation : Aspiration may occur during swallowing or vomiting resulting in lung damage.
Ingestion : May be harmful if swallowed.
Skin : Irritating to skin. Repeated and prolonged contact with this material may aggravate medical conditions for person having pre-existing skin disorders.
Eyes : Irritating to eyes. Zinc C1-C14 is an eye irritant at concentration of 5% or greater.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

AERG : Not applicable.

Regulatory information

TDG / IMDG / IATA : Not regulated.

15 . Regulatory information

Canada

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



Canadian lists

: **CEPA Toxic substances**: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: The following components are listed: Zinc
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

Canada inventory (DSL/NDSL)

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

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

International lists

: This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

Label requirements : CAUSES EYE AND SKIN IRRITATION.

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

HAZARD RATINGS

Health	2
Fire hazard	1
Physical Hazard	0
Personal protection	X

4- Extreme
 3- Serious
 2- Moderate
 1- Slight
 0- Minimal

See section 8 for more detailed information on personal protection.

16 . Other information

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

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



References : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

Date of issue : 05/30/2009

Date of previous issue : 05/01/2008

Version : 2

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.

16 . Other information

Label requirements : MAY CAUSE EYE AND SKIN IRRITATION.

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

HAZARD RATINGS

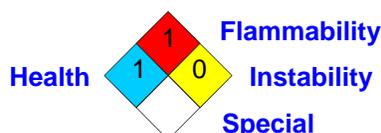
Health	1
Fire hazard	1
Physical Hazard	0
Personal protection	x

4- Extreme
3- Serious
2- Moderate
1- Slight
0- Minimal

See section 8 for more detailed information on personal protection.

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

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



References : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

Date of issue : 06/03/2009
Date of previous issue : 06/01/2008
Version : 2

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