MUNICIPALITY OF RESOLUTE BAY

Environmental Emergency Contingency Plan for Municipal Water Licence

March 2025

Document Control

Date	Document Title	Author	Details
July 2016	Spill Contingency Plan Resolute Bay Metal Wastes (2001) Site	Unknown	Previous document
March 2025	Municipality of Resolute Bay Environmental Emergency Contingency Plan for Municipal Water License	Government of Nunavut, Community and Government Services (GN-CGS) and Dillon Consulting Limited.	Update previous document to a standardized template, addition of hazardous waste volumes and rates, addition of SDS sheets to appendices, addition of scaled maps

Table of Contents

1.0 **Introduction** **1**

1.1 Purpose of Plan 1

1.2 Objectives 2

1.3 Health and Safety 2

1.4 Municipality of Resolute Bay Environmental Policy 2

2.0 **Site and System Description** **3**

2.1 General Site Description 3

2.1.1 Solid Waste Collection and Disposal 4

2.2 Hazardous Materials in the Community 5

3.0 **Spill Response Organization** **7**

3.1 Community Contact Information and Responsibilities 8

3.2 Off-Site Resources 9

4.0 **Spill Reporting Procedure** **11**

4.1 NWT/NU Spill Report Line 11

5.0 **Action Plans** **13**

5.1 Initial Action 13

5.2 Environmental and Human Health Protection and Mitigation Measures – General Procedures 13

5.3 Mitigative Measures: Hydrocarbon Spills 14

5.3.1 Hydrocarbon Spill on Soil, Gravel, Rock, or Vegetation 14

5.3.2 Hydrocarbon Spill on Water 14

5.3.3 Hydrocarbon Spill on Ice and Snow 14

5.3.4 Hydrocarbon Contaminated Material Storage and Transfer 15

5.4 Mitigative Measures: Solid Waste 15

5.4.1 Solid Waste Spill on Soil, Gravel, Rock, or Vegetation 15

5.4.2 Solid Waste Spill into Water 15
5.4.3 Solid Waste Spill on Ice and Snow 15
5.4.4 Disposal 16
5.5 Mitigative Measures: Hazardous Materials 16
5.5.1 Hazardous Solid Waste Spill on Soil, Gravel, Rock, or Vegetation . 16
5.5.2 Hazardous Solid Waste Spill into Water 16
5.5.3 Hazardous Solid Waste Spill on Ice and Snow 16
5.5.4 Disposal 16
5.6 Transferring, Storing, and Managing Spill Related Wastes 16
5.7 Spill Recovery Assessment 17
6.0 **Spill Response Resources** **19**
6.1 Additional Personnel 19
6.2 Spill Response Equipment Inventory 19
7.0 **Training** **20**
8.0 **Annual Review of this Environmental Emergency Contingency Plan** **21**

Figures

Figure 1: Resolute Bay and Surrounding Area (Google Earth, 2025)..... 4

Tables

Table 1 Potential Hazardous Materials in Municipality of Resolute Bay..... 5
Table 2 Spill Response for Municipal Infrastructure..... 9
Table 3 Spill Kit Inventory 19

Appendices

A Spill Report Form

B Maps

C Safety Data Sheets

1.0 Introduction

This Environmental Emergency Contingency Plan relates to the collection, transportation, storage, and treatment operations associated with water supply, sewage and solid waste for the Municipality of Resolute Bay, Nunavut. This plan applies to facility operations and spill events relating to solid waste for NWB licensed facilities.

Date this plan was prepared: 2025-Jan-28

Community: Resolute Bay
Latitude: 73º43'01"N
Longitude: 94º58'10"W

This plan was created to meet the requirements of the community's water licence:

Water licence number: 3BM-RES2025
Issue date: March 30, 2020
Expiry date: March 29, 2025

1.1 Purpose of Plan

The impacts of spills can be catastrophic and may threaten or damage the environment, especially water supplies. As such, the Government of Nunavut (GN) requires contingency plans be written and fully implemented. The purpose of this Environmental Emergency Contingency Plan is to provide a plan of action for spills (sewage, solid waste, and petroleum products) that may occur as a result of water supply and treatment, sewage collection and treatment, and solid waste collection and disposal operations undertaken within the Municipality of Resolute Bay, Nunavut.

The Plan also focuses on the health and safety of both workers and the public. This Environmental Emergency Contingency Plan will assist in implementing corrective options quickly to minimize environmental damage. Furthermore, it defines the responsibilities of key personnel and outlines procedures to contain and recover spills of sewage, solid waste, and hydrocarbon products arising from water, sewage, and solid waste, collection, transportation, storage, and treatment operations effectively and efficiently. It will assist the Municipality in meeting the regulatory requirements related to reporting events to the appropriate authorities within the prescribed time period.

1.2 Objectives

The objectives of this Emergency Contingency Plan are to:

- Ensure the health and safety of workers and the general public (first priority at all times);
- Provide a plan with procedures so that the Municipality and their Spill Response Team can rapidly respond to a spill situation and minimize injury to individuals and environmental damage;
- Comply with all existing regulations;
- Cooperate with other groups and agencies;
- Be prepared and able to provide an integrated team approach with various Municipal departments and Federal and Territorial agencies; and
- Keep staff, government officials, and residents informed.

1.3 Health and Safety

Health and safety of workers and the public always takes priority. All activities must follow the requirements of the Nunavut Safety Act.

1.4 Municipality of Resolute Bay Environmental Policy

It is the policy of the Municipality of Resolute Bay to fully comply with all applicable legislation to ensure the protection of the environment in the territory of Nunavut. The legislation includes, but is not limited to:

- Nunavut Safety Act;
- Environmental Protection Act, Section 34 – Spill Contingency Planning and Reporting Regulations; and
- Nunavut Waters and Nunavut Surface Rights Tribunal Act.

The Municipality will cooperate with other groups committed to protecting the environment and shall ensure that Municipal employees, regulatory authorities, and the public are informed on the policies and procedures developed to help protect the environment and the residents of Resolute Bay.

2.0 Site and System Description

2.1 General Site Description

This Environmental Emergency Contingency Plan is to be implemented within the Municipal boundaries of the Municipality of Resolute Bay, Nunavut.

The Municipality of Resolute Bay is located approximately 1550 km northwest of Iqaluit on the south coast of Cornwallis Island on the Perry Channel. The current estimated population of Resolute Bay is 282 people (2020) with approximate growth rate of 3% annually. The community was designed to accommodate up to 1,500 people. This is a National Defense training centre. Therefore, the Municipality's population increases to approximately 800 individuals during summer due to the presence of the military.

There are three Water Licences overseen by the Government of Nunavut, Community and Government Services (GN-CGS), for this community:

- Licence No. 3BM-RES1520 allowing for the deposit of Waste at the Solid Waste Facilities;
- Licence No. 3BM-RUT1520 allowing for the use of Water and disposal of Sewage through the Utilidor System, and currently being amended to become a Type "A" licence; and
- Licence No. 3BM-YBR1621 allowing for the deposit of Waste at the airport Sewage disposal facility.

The community and surrounding area are shown in **Figure 1**.

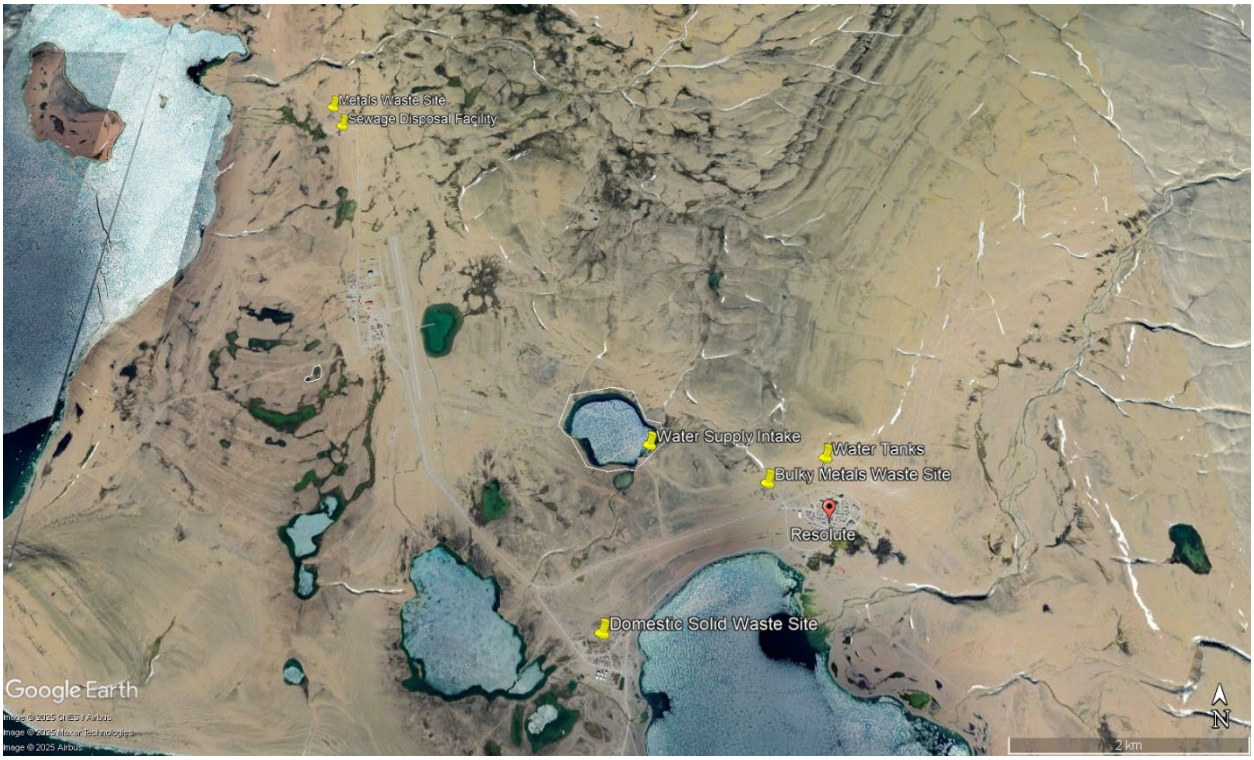


Figure 1: Resolute Bay and Surrounding Area (Google Earth, 2025)

2.1.1 Solid Waste Collection and Disposal

The Municipality of Resolute Bay provides regular solid waste pickup for the Community's residents, businesses, and institutions. Solid waste is trucked to the Municipality's Solid Waste Management Facility (**Figure 1**).

Water Licence No. 3BM-RES1520 includes the management of municipal solid Wastes at the following non-engineered disposal facilities:

- Domestic solid Waste site;
- Bulky metal Waste site within the community;
- New Fenced Metal Waste Site (FMWS) next to the airport.

The scope of the present Licence was broadened in 2016 to include the Fenced Metal Waste Site (previously defined as the Unused Dump Site), because the other two were reaching capacity. This additional Waste site was constructed in 2001.

Potential environmental emergencies include:

- Fuel spill (from a truck);
- Uncontrolled discharge of landfill impacted surface water (leachate);

- Fire in the waste; and
- Hazardous waste spill.

2.2 Hazardous Materials in the Community

Table 1 outlines potential hazardous materials present in the community. This is intended to be a list of commonly present hazardous materials and may not cover every hazardous material present in the community at any given time.

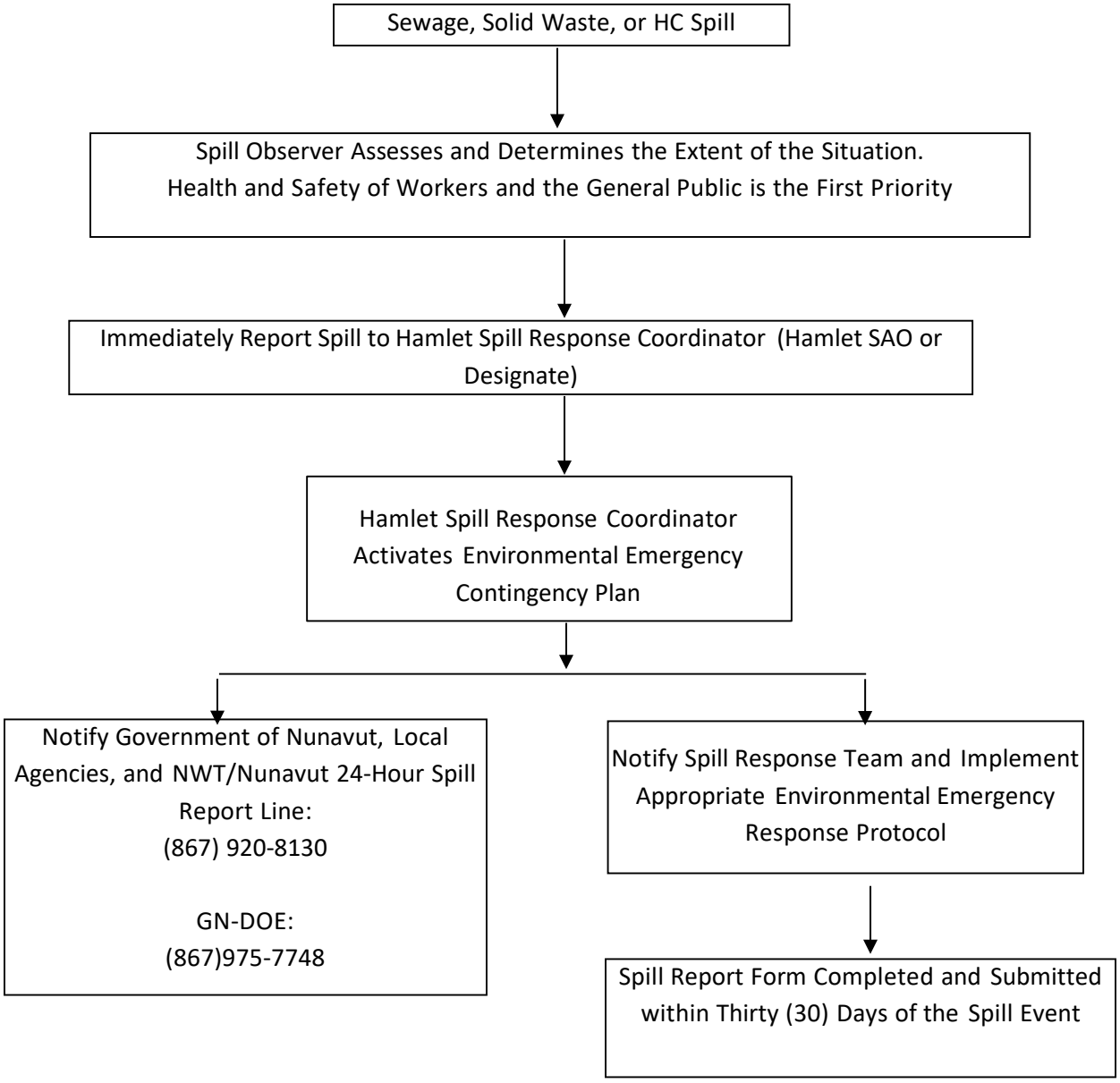
Table 1 Potential Hazardous Materials in Municipality of Resolute Bay

Material	Estimated Quantity in Community	Uses	Potential Discharge
Diesel fuel	0.62 cubic meters per capita per year for all materials combined	Used to fuel pumps or generators	Failure in system, spill during refuelling, leak
Gasoline		Motor vehicle fuel	Vehicular accident, leak, spill during transfer
Lubricating Oil		Equipment lubrication	Valve or line failure, leak
Antifreeze and other coolants		Motor vehicles	Vehicular accident, spill during transfer
Hydraulic oil		Heavy equipment	Leak, valve or line failure, spill during transfer
Motor oil		Motor vehicles	Vehicular accident, leak
Batteries		Vehicle batteries	Improper storage or segregation
Jet A-1 Fuel		Aircraft fuel	Improper storage, spill during refuelling, leak
Propane		Household use	Leak, improper storage

Safety Data Sheets for the safe handling of the potential hazardous materials is provided in **Appendix C**.

3.0 Spill Response Organization

The flowchart on the following page identifies the response organization and the chain of command for responding to a spill or release. This chart should be posted in a highly visible location in each community facility to provide quick access to the spill response process.



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 shown in the attached table. These spills must be reported to the Spill Report Line.

24-Hour Spill Line: 867-920-8130

By regulation, all spills of any type, size, or location are considered reportable.

3.1 Community Contact Information and Responsibilities

The Senior Administrative Officer (SAO) or their designate will serve as the Spill Response Coordinator for the Municipality in the event of a sewage or HC spill during collection, transportation, storage, or treatment operations. The SAO of the Municipality of Resolute Bay will appoint and train appropriate personnel to make up the Spill Response Team, which normally consist of the following personnel:

- Spill Response Coordinator (SAO or designate); and
- Municipal Public Works Personnel.

Chief Administrative Officer:
Name: Ian Dudla
Phone: (867) 252-3616.
Email: sao@resolute.ca

Maintenance Foreman or Work Foreman:
Name: Mathew Nungaq
Phone: (867) 252-3616.
Email: sao@resolute.ca

The responsibilities of the Spill Response Coordinator are as follows:

- Assume complete authority over the spill scene and coordinate all personnel involved;
- Control access and ensure the health and safety of workers and the general public;
- Evaluate the spill situation and develop an overall plan of action;
- Activate the Environmental Emergency Contingency Plan for the Municipality of Resolute Bay
- Immediately report the spill to the NWT/Nunavut 24-Hour Spill Report Line at (867)920-8130, and other applicable regulatory or assistance agencies;
- Provide regulatory agencies with information regarding the status of the clean-up activities;
- Act as a spokesperson on behalf of the Municipality of **Resolute Bay** with regulatory agencies, the public, and the media;
- Prepare and submit a report on the spill incident to regulatory agencies within 30 days of the event; and
- Obtain the assistance of regulatory agencies, consultants, and/or contractors with the skills and equipment to deal with emergency situations deemed to be beyond the capabilities of Municipal staff.

Responsibilities for spill response by facility are outlined in Table 3.

Table 2 Spill Response for Municipal Infrastructure

Facility	Name	Position	Phone
SWDF	Ian Dudla	SAO	(867) 252-3616
Other Locations	Ian Dudla	SAO	(867) 252-3616

3.2 Off-Site Resources

Off-site resources for assistance in the event of a spill are listed below. Assistance from outside the community may not be able to reach the site until at least the next business day.

24-Hour Spill Line	(867) 920-8130
Crown Indigenous Relations and Northern Affairs Canada	(867) 975-4295
Environment and Climate Change Canada Environmental Emergency Response	(780) 951-8861
Government of Nunavut	(867) 920-8130
Department of Fisheries and Oceans	(867) 979-8000
Municipality of Resolute Bay Health Centre	(867) 252-3844
Municipality of Resolute Bay Fire Department	(867) 252-3333
Royal Canadian Mounted Police	(867) 252-0123

4.0 Spill Reporting Procedure

The Spill Response Coordinator must be notified immediately by any individual who is aware of any spill either by phone, email, or in person.

The following are the incident reporting procedures once the Spill Response Coordinator activates this Environmental Emergency Contingency Plan:

- Report spills immediately to the 24-Hour NWT/Nunavut Spill Report Line Phone (867)920-8130;
- Report immediately to the Crown Indigenous Relations and Northern Affairs (CIRNAC) Manager, Water Resources in Iqaluit at (867) 975-4550 and Government of Nunavut, Department of Environment (GN-DOE) (867) 975-7748;
- Notify Municipality of Resolute Bay Fire Department; and
- Fill out the NWT/Nunavut Spill Report Form (**Appendix A**) within thirty (30) days of the spill event occurring.

4.1 NWT/NU Spill Report Line

All spills, as defined in this document, must be reported immediately to the 24-hour NWT/Nunavut Spill Report Line. The following information should be gathered prior to making the call:

- Date and time of spill (if known);
- Location and map coordinates (if known) and direction of flow of spill materials if moving;
- Party responsible for spill;
- Product/material spilled and quantity estimate;
- Cause of spill;
- Note whether spill has been contained or if it is still releasing into the environment;
- Extent of contaminated area;
- Factors affecting spill or recovery, such as weather conditions or terrain;
- Note whether spill containment is available;
- Action taken or proposed;
- If assistance is required;
- Possible hazards to individuals, property, or environment (e.g., fire, drinking water, fish, wildlife, etc.); and
- Health and safety issues.

The information collected should be brief, and rough estimates made to enable the Spill Report Line and the Spill Response Coordinator to assess the situation. The information is the same as to that required on the Nunavut Spill Report form that must be completely filled out and submitted within thirty days of the incident. This form is included as **Appendix A**.

5.0 Action Plans

5.1 Initial Action

The instructions to be followed by the first person on the spill scene are as follows:

- Always be alert and consider your safety and the safety of others first;
- If possible, estimate the volume of material that has been spilled;
- Assess the hazard of people in the vicinity of the spill;
- If possible, and safety permits, attempt to stop the release of product to minimize potential for environmental impacts;
- Immediately report the spill to the Spill Response Coordinator; and
- Resume any effective action to contain, mitigate, or terminate the flow of the spilled material.

5.2 Environmental and Human Health Protection and Mitigation Measures – General Procedures

The environmental protection and mitigation measures outlined in the following sections are to be taken by all personnel responding to a spill event. This will reduce the chance of environmental impairment and health hazards due to a spill, release, or other incident. The following general clean-up procedures shall apply for all spill areas within the Municipality:

- Control access to the area and ensure the health and safety of workers and the general public;
- Always wear personal protective equipment (PPE);
- Smoking is prohibited during all spill response activities;
- Eliminate all ignition sources;
- Contain spills on soil or rock by construction of earthen dykes using available material. If soil is not available, place sorbent materials or a boom in the path of the spill. As the sorbent barrier becomes saturated, continually replace it. Fuel or other liquids lying in pools, or trenches are to be removed with pumps, buckets, or skimmers;
- If the ground is snow covered, create snow dykes, and line them with a chemically-compatible liner for containment and recovery of liquid;

- For fuel spills on water, deploy containment booms, and recovery as much fuel as possible with a work boat and skimmer if less than 1/10th of the area is covered in ice. If the area is frozen, burn fuel spills using igniters;
- Apply sorbent materials, if necessary;
- Assess potential for disturbance of wildlife, fish, and archaeological sites from spill or clean-up operations;
- Notify environmental authorities to discuss available and feasible disposal and clean-up options;
- Conduct required clean-up operations;
- Assess and appropriately treat any areas disturbed by clean-up activities with laboratory testing; and
- Ensure that the site has been completely restored. Resume operations, only once all work is finalized and laboratory testing confirmed.

Procedures for containing spills of specific contaminants are provided in the following sections.

5.3 Mitigative Measures: Hydrocarbon Spills

Hydrocarbon spills include gasoline, diesel fuel, hydraulic fluid, lubricating oil, and aviation fuel. If possible, and safety permits, stop the flow of product, which is occurring, and eliminate all ignition sources. Smoking is prohibited during all spill response activities.

5.3.1 Hydrocarbon Spill on Soil, Gravel, Rock, or Vegetation

- Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm easily capture the spill after all vapours have dissipated;
- Remove the spill by using absorbent pads or excavating the soil, gravel, or snow; and
- Remove spill splashed on vegetation using particulate absorbent material.

5.3.2 Hydrocarbon Spill on Water

- Use containment boom to capture spill for recovery after vapours have dissipated;
- Use absorbent pads to capture small spills;
- Use a petroleum skimmer for larger spills; and
- GN-DOE requires that Environment Canada be consulted regarding clean-up methods.

5.3.3 Hydrocarbon Spill on Ice and Snow

- Build a containment berm around spill using snow;

- Remove spill using absorbent pads or particulate sorbent material;
- The contaminated ice and snow must be scraped and shovelled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags; and
- GN-DOE requires that Environment Canada be consulted regarding clean-up methods.

5.3.4 Hydrocarbon Contaminated Material Storage and Transfer

In the absence of a landfarm, soil and gravel contaminated by hydrocarbons should be bagged, contained, and transported out of the community for proper disposal.

As space permits, small quantities of water, ice, snow, vegetation, and cleanup supplies contaminated by HC may be stored in labeled drums in the hazardous waste storage facility in accordance with normal operating procedures. If the quantity of contaminated material makes storage in drums unfeasible, the Municipality shall contact the appropriate regulatory agencies before removing any materials.

5.4 Mitigative Measures: Solid Waste

5.4.1 Solid Waste Spill on Soil, Gravel, Rock, or Vegetation

- Physically remove the spilled solid waste from the area, and deposit in the municipal Solid Waste Management Facility.

5.4.2 Solid Waste Spill into Water

- Use containment boom to capture soil waste for recovery;
- Physically remove the spilled solid waste from the water, and deposit in the municipal Solid Waste Management Facility;
- Capture any sheen from the water using absorbent pads or skimmer, and deposit any used absorbent pads to the Municipal Solid Waste Disposal facility; and
- Environment Canada should be contacted regarding clean-up methods.

5.4.3 Solid Waste Spill on Ice and Snow

- Build a containment berm around spill using snow;
- Physically remove the spilled solid waste and deposit in the Municipal Solid Waste Management Facility; and
- Environment Canada should be contacted regarding clean-up methods.

5.4.4 Disposal

Any solid waste shall be transferred to the Municipal Solid Waste Management Facility.

5.5 Mitigative Measures: Hazardous Materials

5.5.1 Hazardous Solid Waste Spill on Soil, Gravel, Rock, or Vegetation

- Physically remove the spilled hazardous solid waste from the area, and store in the Hazardous Waste Storage Area at the Municipal Solid Waste Management Facility.

5.5.2 Hazardous Solid Waste Spill into Water

- Use containment boom to capture solid hazardous waste for recovery;
- Physically remove the spilled solid waste from the water, and store in the Hazardous Waste Storage Area at the Municipal Solid Waste Management Facility; and
- Capture any sheen from the water using absorbent pads or skimmer and store any used absorbent pads as hazardous waste.

5.5.3 Hazardous Solid Waste Spill on Ice and Snow

- Build a containment berm around spill using snow; and
- Physically remove the spilled hazardous solid waste and store in the Hazardous Waste Storage Area at the Municipal Solid Waste Management Facility.

5.5.4 Disposal

Any solid hazardous waste shall be transferred to the Hazardous Waste Storage Area at Municipal Solid Waste Management Facility until it can be properly characterized and shipped out of the community.
The GN-DOE monitors the movement of hazardous waste through the use of a tracking document known as a Waste Manifest. A Waste Manifest must accompany all movements, and all parties must register with DOE by contacting:

- Sean Noble: (867) 975-7769, snoble@gov.nu.ca; and
- Michele LeBlanc-Havard: (867) 975-7726, mleblanc-harvard1@gov.nu.ca.

5.6 Transferring, Storing, and Managing Spill Related Wastes

Spills are generally cleaned up starting at the outer limit of the spill and working towards the point of the spill. Sorbent materials and hand tools such as cans and shovels are used for smaller spills. Larger spills can be contained with the use of a pump and/or heavy equipment. Spill wastes include used absorbent materials and containers of impacted water and snow.

Sorbent materials should be placed in plastic bags or drums for proper disposal. The containers of impacted water and snow should be sealed and stored until disposal at an approved facility can be arranged. For most of the containment procedures, spilled petroleum products and materials used for containment will be placed into empty waste oil containers and sealed for proper disposal at an approved disposal facility.

Following a spill, all used materials need to be properly cleaned and/or replaced.

5.7 Spill Recovery Assessment

Once a spill has been contained, community personnel will consult with the regulatory personnel assigned to the file to determine the level of remediation required. The regulatory personnel may request that a site-specific study be conducted to ensure appropriate remediation is met for the site.

After clean-up has been completed, the community should follow up with the 24-hour Spill Line to ensure that the spill report file has been closed. Closure of the spill file provides evidence that the spill was cleaned up to the regulator's satisfaction. This will help prevent the spill from being considered an environmental liability for the community in the event of a change of ownership, refinancing, or closure of the site. A copy of the spill report marked "Closed" can be provided on request for the community's files. The Spill Line also keeps copies of these reports on file.

To determine whether a spill has been successfully remediated, samples of the soil and/or water within the spill containment area and surrounding the area, are to be collected and sent to an accredited Canadian Association of Environmental Analytic Laboratories (CAEAL) laboratory to be analyzed for the chemical parameters contained expected in the spill material. If concentrations of the spill chemicals are not detected, or are at concentrations below the applicable Territorial, Federal, or CCME regulations/criteria, the spill clean-up will be determined a success. Clean-up operations may then cease.

Refer to the Environmental Monitoring Program and Quality Assurance/Quality Control Plan for the Municipality of Resolute Bay for a description of sampling protocols and parameters. Sampling and monitoring results (air, sediments, water, and soil) will be compared to the applicable land use classification of the site (residential, commercial, industrial, etc.), as contained within the Canadian Environmental Quality Guidelines (CCME, 2007). Should NWB Water License or Nunavut guideline criteria exist that are applicable to the situation, then the most stringent criteria should be followed.

Depending on the nature of the spill or emergency, the material requiring clean-up and handling must be handled and disposed of in accordance with Nunavut Guidelines for Industrial Waste Discharges or General Management of Hazardous Waste.

Refer to the Monitoring Program and Quality Assurance/Quality Control Plan, Municipality of Resolute Bay for directions on obtaining sample bottles, conducting sampling, and laboratory analysis of samples. Refer to the following documents for the handling and disposal of liquid and solid waste within the Municipality of Resolute Bay:

- Solid Waste Management Facility Operation and Maintenance (O&M) Plan; and

6.0 Spill Response Resources

6.1 Additional Personnel

In addition to Public Works staff, the Resolute Bay Fire Department is available to assist in spill response and clean-up activities. Personnel from the local RCMP Detachment will be available for securing the site from unauthorized individuals, closing roads, etc. The Community Health Centre has personnel to assist in the treatment of anyone injured during the emergency.

Environmental consulting companies can provide technical guidance and spill response impact evaluation, remediation, and post remedial confirmatory sampling.

6.2 Spill Response Equipment Inventory

Within the community, there is some equipment available to assist in responding to a spill including heavy equipment (i.e., vacuum trucks, dozer, front end loader, and grader), as well as various handheld tools including shovels. In addition, the municipal spill kit should be available during spill incident response operations. The municipal spill kit is located at the Municipal Parking Garage as shown in **Appendix B**.

Each spill kit should contain the following supplies (Table 3):

Table 3 Spill Kit Inventory

Spill Kit Item	Quantity
360 litre polyethylene over pack drum	1
Oil sorbent booms (5” X 10’)	6
Oil sorbent sheets (16.5” X 20” X 3/8”)	100
Drain cover (36” X 36” X 1/16”)	1
Caution tape (3” X 500’)	1
1lb plugging compound	1
Nitrile gloves (pair)	4
Safety goggles (pair)	4
Tyvek coveralls (pair)	4
Instruction booklet	1
Printed disposable bags (24” X 48”)	10

7.0 Training

All members of the Spill Response Team should be trained in the safe operation of all machinery and tools to help prevent sewage, solid waste, and hazardous material spills. All Public Works staff should also be trained for initial spill response. Annual refresher exercises should be conducted to review the procedures of this Environmental Emergency Contingency Plan with all members the Spill Response Team, including members of the local volunteer fire department, RCMP Detachment, and Community Health Centre.
Spill Response Team training should include the following aspects:

- Spill awareness and prevention;
- Methods of detection;
- Types of spills and seasonal considerations;
- Reporting procedures and initial responses;
- Spill response kit familiarization;
- Clean-up and site remediation methods; and
- Occupational health and safety including proper selection and use of protective equipment.

8.0 Annual Review of this Environmental Emergency Contingency Plan

As part of the preparation of the Annual Report to the Nunavut Water Board as required by the Water License, the Municipality should review and update the information contained within this plan. The purpose of the update is to ensure all changes to regulations are incorporated into this plan, along with the use of any new technology or method advances, to prevent or stop a spill and to mitigate and/or remediate a spill. This ensures that the plan adapts as the Municipality grows, to ensure the community is properly prepared in the event of an incident.

Staff training must accompany the use of this document.

Annual refresher training of personnel should be completed after any revisions to this document have been approved. This will familiarize personnel with the updated plan, and to provide a rapid and coordinated response.

Appendix A

Spill Report Form

Appendix B

Maps

Appendix C

Safety Data Sheets

Appendix A

Spill Report Form

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

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

REPORT LINE USE ONLY

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

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 ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR
E	LATITUDE DEGREES MINUTES SECONDS	LONGITUDE DEGREES MINUTES SECONDS

F	RESPONSIBLE PARTY OR VESSEL NAME	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION	
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION	
H	PRODUCT SPILLED	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER
I	SPILL SOURCE	SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS		

L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE

REPORT LINE USE ONLY

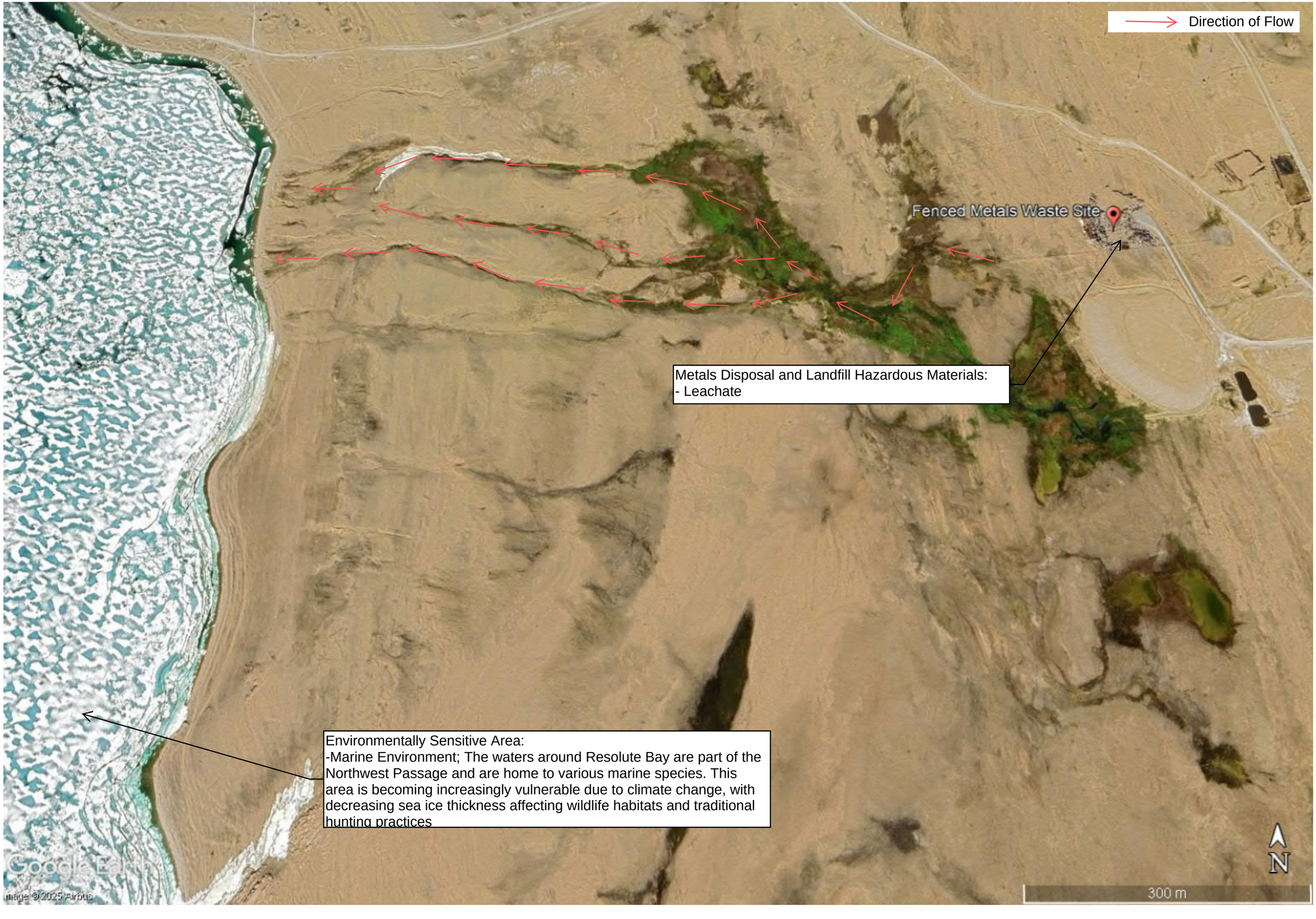
N	RECEIVED AT SPILL LINE BY	POSITION **Station operator**	EMPLOYER	LOCATION CALLED **Yellowknife, NT**	REPORT LINE NUMBER **(867) 920-8130**

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

Appendix B

Maps


Direction of Flow
Fenced Metals Waste Site
Metals Disposal and Landfill Hazardous Materials:
- Leachate
Environmentally Sensitive Area:
-Marine Environment; The waters around Resolute Bay are part of the Northwest Passage and are home to various marine species. This area is becoming increasingly vulnerable due to climate change, with decreasing sea ice thickness affecting wildlife habitats and traditional hunting practices
Google Earth
Image © 2025 Airbus
N
300 m

Appendix C

Safety Data Sheets

Safety Data Sheet

Section 01 Identification

Product Identifier	Calcium Hypochlorite, HTH Granular
Other Means of Identification	Chlorinated lime, bleaching powder, pittchlor
Product Use and Restrictions on Use	Water treatment, source of available chlorine, algicide.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7 Phone: 800.387.7503 Fax: 888.281.8109 www.cleartech.ca
Prepared By	ClearTech Industries Inc. technical writer
24-Hour Emergency Phone	306.664.2522

Section 02 Hazard Identification

Physical Hazards

Oxidizing solid	Category 2

Health Hazards

Acute toxicity - oral	Category 4
Skin corrosion / irritation	Category 1B
Serious eye damage / eye irritation	Category 1

Signal Word

Danger

Hazard Statements

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

Pictograms



Precautionary Statements

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P220 Keep away from clothing and other combustible materials.

P260 Do not breathe dust.

P264 Wash affected body parts thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves, protective clothing, eye protection, face protection.

Response

P301 P312 P330 P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor if you feel unwell.

P303 P361 P353 P363 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.

P304 P340 P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.

P305 P351 P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents / container in accordance with all federal, provincial and / or local regulations including the Canadian Environmental Protection Act.

Hazards Not Otherwise Classified

Contact with acids liberates toxic gas.

Supplemental Information

Not available

Section 03 Composition / Information on Ingredients

Hazardous Ingredients:

Chemical name	Common name(s)	CAS number	Concentration (w/w%)
Hypochlorous acid, calcium salt	Calcium Hypochlorite	7778-54-3	60-100%

Section 04 First-Aid Measures

Description of necessary first-aid measures

Inhalation Remove source of exposure or move person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor. If breathing has stopped, trained personnel should begin rescue breathing or if the heart has stopped, immediately start cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED). Avoid mouth to mouth contact by using a barrier device.

Ingestion Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor. If vomiting occurs naturally, lie on your side, in the recovery position. Call a POISON CENTER or doctor if you feel unwell. Rinse mouth.

Skin contact Avoid direct contact. Wear chemical protective clothing, if necessary. Take off immediately contaminated clothing, shoes and leather goods. Rinse skin with lukewarm, gently flowing water / shower for 30 minutes. Store contaminated clothing under water and wash before re-use or discard. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before re-use, or discard.

Eye contact	Avoid direct contact. Wear chemical protective gloves, if necessary. Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 30 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a POISON CENTER or doctor.

Most important symptoms and effects, both acute and delayed

Inhalation	Causes severe burns to the mouth and throat.
Ingestion	Causes burns to the mouth and throat. Harmful if swallowed.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Further information	For further information see Section 11 Toxicological Information.

Section 05 Fire Fighting Measures

Suitable extinguishing media	This material is an oxidizer. Use large quantities of water as fog to fight fires in which this material is involved.
Unsuitable extinguishing media	Carbon dioxide or other extinguishing agents that smother flames are not effective in fires involving oxidizers. Do NOT use dry chemical fire extinguishing agents containing ammonium compounds (such as some A:B:C agents), since an explosive compound can be formed. Water jets are not recommended in fires involving chemicals.
Specific hazards arising from the chemical	May intensify fire; oxidizer.
Special protective equipment for fire-fighters	Wear NIOSH-approved self-contained breathing apparatus and chemical-protective clothing.

Section 06 Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment (See Section 08 Exposure Controls and Personal Protection). Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from clothing and other combustible materials. Stay upwind, ventilate area. Do not breathe dust.
Environmental Precautions	Prevent material from entering waterways, sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.
Methods and Materials for Containment and Cleaning Up	Do not pre-damp spilled material, it may generate toxic chlorine. Avoid the release of dust into the air. Use a vacuum to colect spilled material, transfer into clean, dry, labelled containers and cover. Flush area with water.

Section 07 Handling and Storage

Precautions for Safe Handling	Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Prevent the release of dust into the workplace air. Inspect containers for damage or leaks before handling. If the original label is damaged or missing replace with a workplace label. Have suitable emergency equipment for fires, spills and leaks readily available. Never return contaminated material to its original container.
Conditions for Safe Storage	Store in a cool, dry, well-ventilated area, away from heat sources and incompatible materials. Always store in original labeled container. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues. Protect label and keep it visible.

Incompatibilities

Acids, such as sulphuric, nitric, hydrochloric, phosphoric, flurosilicic (HFSA), sulphonic, acetic, citric, oxalic, and formic.

Reducing agents, such as hydrogen, sodium borohydride, sulphur dioxide, thiosulphates, hydrazine, phosphites, carbon, and oxalic, formic and ascorbic acid.

Organic material, such as wood, paper, gasoline, diesel, solvents and some glycol based heat transfer fluids

Moisture can cause chlorine gas release. Nitrogen compounds such as ammonia cause the formation of irritating and toxic chloramines.

Section 08 Exposure Controls and Personal Protection

Exposure limits

Component	Regulation	Type of listing	Value
Chlorine	ACGIH	TWA	0.5 ppm
		STEL / Ceiling	1 ppm

Engineering controls

Ventilation Requirements

Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other

An emergency shower and eyewash station should be available, tested, and be in close proximity to the product being handled in accordance with provincial regulations.

Protective equipment

The following are recommendations only. It is the responsibility of the employer / user to conduct a hazard assessment of the process in which this product being used and determine the proper engineering controls and PPE for their process. Additional regulatory and safety information should be sought from local authorities and, if needed, a professional industrial hygienist.

Eye and face protection

Where there is potential eye or face exposure, tightly fitting safety goggles and a face shield or a full face respirator or similar protective equipment which protects the wearer's face and eyes are recommended. Contact lenses are not recommended; they may contribute to severe eye injury.

Hand and body protection

Disposable latex or nitrile gloves are recommended to prevent incidental contact. Butyl rubber, neoprene, or PVC skin protection is recommended for extended contact. Leather gloves are not recommended for chemical protection. Refer to manufacturer’s specifications for breakthrough times and permeability information; note that breakthrough times and permeability vary with temperature, application and age of material. Continued use of contaminated safety gear or clothing is not recommended; wash before reuse or discard.

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment.

NIOSH respirator recommendations for: Chlorine

Up to: 5 ppm

(APF = 10) Any chemical cartridge respirator with cartridge(s) providing protection against Chlorine

(APF = 10) Any supplied-air respirator

Up to: 10 ppm

(APF = 25) Any supplied-air respirator operated in a continuous-flow mode

(APF = 25) Any powered, air-purifying respirator with cartridge(s) providing protection against Chlorine
(APF = 50) Any chemical cartridge respirator with a full facepiece and cartridge(s) providing protection against Chlorine
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against Chlorine
(APF = 50) Any self-contained breathing apparatus with a full facepiece.
(APF = 50) Any supplied-air respirator with a full facepiece

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against Chlorine
Any appropriate escape-type, self-contained breathing apparatus

Thermal hazards	Not available

Section 09 Physical and Chemical Properties

Appearance

Physical state	Solid
Colour	White to pale yellow
Odour	pungent, chlorine
Odour threshold	Not available

Property

pH	10.4-10.8 @ 1% in water
Melting point / freezing point	Not applicable (decomposes)
Initial boiling point and boiling range	Not applicable (decomposes)
Flash point	Not applicable
Evaporation rate	Not available
Flammability	Non-flammable
Upper flammable limit	Not available
Lower flammable limit	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	g/cm³
Solubility	180-220 g/L @ 20 °C
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available

Decomposition temperature	100-175 °C a wide variety of decomposition temperatures have been reported. Calcium hypochlorite decomposition rate increases with temperature and exposure to light.
Viscosity	Not applicable
Specific gravity	Not applicable
Particle characteristics	Particle size: 210-1190 micron (>95%) Particle shape: Granular
Formula	$Ca(ClO)_2$
Molecular weight	142.98 g/mol

Section 10 Stability and Reactivity

Reactivity	This product is an oxidizer and will react with reducing agents and organic compounds such as paper or wood to produce heat and could potentially catch fire.
Stability	This product is stable if stored according to the recommendations in Section 07.
Possibility of hazardous reactions	Hazardous polymerization is not known to occur.
Conditions to avoid	Avoid contact with incompatible materials.
Incompatible materials	Acids, such as sulphuric, nitric, hydrochloric, phosphoric, flurosilicic (HFSA), sulphonic, acetic, citric, oxalic, and formic. Reducing agents, such as hydrogen, sodium borohydride, sulphur dioxide, thiosulphates, hydrazine, phosphites, carbon, and oxalic, formic and ascorbic acid. Organic material, such as wood, paper, gasoline, diesel, solvents and some glycol based heat transfer fluids Moisture can cause chlorine gas release. Nitrogen compounds such as ammonia cause the formation of irritating and toxic chloramines.
Hazardous decomposition products	Chlorine gas, chloramines.

Section 11 Toxicological Information

Acute Toxicity (LD50 / LC50 values)

Component	Route	Species	Value	Exposure time
Calcium hypochlorite	Oral	Rat	790 mg/kg bw	

Toxic Health Effect Summary

Chemical characteristics	Calcium hypochlorite is a strong oxidizing agent. The majority of its effects are thought to be localized to the point of contact
Skin	Causes severe skin burns.
Ingestion	Causes burns to the mouth and throat. Harmful if swallowed.
Inhalation	Causes severe burns to the mouth and throat.
Eye contact	Causes serious eye damage.
Sensitization	This product and its components at their listed concentration have no known sensitizing effects.
Mutagenicity	This product and its components at their listed concentration have no known mutagenic effects.
Carcinogenicity	IARC has classified hypochlorite salts as group 3, not classifiable as to its carcinogenicity to humans. This product and its components at their listed concentration have no known carcinogenic effects.
Reproductive toxicity	This product and its components at their listed concentration have no known reproductive effects.

Specific organ toxicity	This product and its components at their listed concentration have no known effects on specific organs.
Aspiration hazard	Not available
Synergistic materials	Not available

Section 12 Ecological Information

Ecotoxicity

Component	Type	Species	Value	Exposure Time
Chlorine	LC50	Rainbow trout	0.06 mg/L	96 hours
	EC50	Water flea	0.116 mg/L	48 hours
	EC50	Algea	0.075-0.330 mg/L	24 hours

Biodegradability	The domestic substance list categorizes calcium hypochlorite as non-persistent.
Bioaccumulation	The domestic substance list categorizes calcium hypochlorite as non-bioaccumulative.
Mobility	This product is water soluble, is not predicted to adsorb to soil and may contaminate ground water.
Other adverse effects	The domestic substance list categorizes calcium hypochlorite as inherently toxic to aquatic organisms.

Section 13 Disposal Considerations

Waste From Residues / Unused Products	Dispose in accordance with all federal, provincial, and local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Do not remove label, follow label warnings even after the container is empty. Empty containers should be recycled or disposed of at an approved waste handling facility.

Section 14 Transport Information

UN number	UN2880
UN proper shipping name and description	CALCIUM HYPOCHLORITE, HYDRATED MIXTURE with not less than 5.5% but not more than 16% water
Transport hazard class(es)	5.1
Packing group	II
Excepted quantities	1 kg
Environmental hazards	Listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special precautions	
Transport in bulk	ERAP index: not available MARPOL 73/78 and IBC Code: This product is not listed in Chapter 17 of the IBC Code.
Additional information	Secure containers (full or empty) during shipment and ensure all caps, valves, or closures are secured in the closed position. **Special Provisions:** 38 A person must not handle, offer for transport or transport these dangerous goods in a large means of containment if they are in direct contact with the large means of containment.

94 When these dangerous goods are in transport, they must be kept out of direct sunlight and away from all sources of heat, and must be placed in adequately ventilated areas.

TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 16 of this SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and published test data regarding the classification of this product are listed in the references at section 16 of this SDS.

Section 15 Regulatory Information.

NOTE: THE PRODUCT LISTED ON THIS SAFETY DATA SHEET HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN HAZARDOUS PRODUCTS REGULATIONS. THIS SAFETY DATA SHEET CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

All components of this product appear on the domestic substance list.

Section 16 Other Information

Date of latest revision: March 30, 2023

Note: The responsibility to provide a safe workplace remains with the buyer / user. The buyer / user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the buyer / user to comply with all applicable laws and regulations regarding handling, using, reselling and shipping this product.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the RDC Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

References:

1) *NIOSH Pocket Guide to Chemical Hazards;* U.S. Department of Health and Human Services, https://www.cdc.gov/niosh/npg/default.html
2) *WorkSafe BC E-Limit;* Workers' Compensation Foard of British Columbia, https://elimit.online.worksafebc.com/
3) *ECHA - Registered Substance Dossier;* European Chemicals Agency, https://echa.europa.eu/registration-dossier/-/registered-dossier/1611
4) *Transportation of Dangerous Goods Regulations;* Transport Canada, https://laws-lois.justice.gc.ca/eng/regulations/SOR-2001-286/index.html
5) Globally Harmonized System of Classification and Labeling of Chemicals (GHS) *Seventh revised edition*
6) International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) 2007 Edition
7) The ACS Style Guide

SAFETY DATA SHEET

{ error: graphic file not found: E:\WWI\graphics

GASOLINE, UNLEADED

SDS Number: 000003000644

Version: 5.0 Revision Date: 2025/02/05 Print Date: 2025/02/13

SECTION 1. IDENTIFICATION

Product name	:	GASOLINE, UNLEADED
Product code	:	11949, 11000, 10999, 10998, 10995, 10993, 10991, 10990, 10989, 10988, 10987, 10474, 10473, 10461, 10455, 10111, 10108, 10097, 10096, 10040, 10039
Other means of identification	:	LVB87, Regular, Unleaded Gasoline (US Grade), Mid-Grade, Plus, Super, Supreme, SuperClean, RegularClean, Plus-Clean, Premium, marked or dyed gasoline, BOB, Blendstock for Oxygenate Blending, Conventional Gasoline, RUL, MUL, SUL, PUL, Additive Denaturant, LVBU (low volatility blend ultra), LVBR (low volatility blend regular).

Manufacturer or supplier's details

Company name of supplier	:	Petro-Canada
Address	:	P.O. Box 2844, 150 - 6th Avenue South-West Calgary, Alberta T2P 3E3 Canada, Telephone: 1-866-786-2671
Emergency telephone	:	CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887; ^CR^Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

Recommended use	:	Unleaded gasoline is used in spark ignition engines including motor vehicles, inboard and outboard boat engines, small engines such as chain saws and lawn mowers, and recreational vehicles.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Flammable liquids	:	Category 1
Skin irritation	:	Category 2
Germ cell mutagenicity	:	Category 1B
Carcinogenicity	:	Category 1A
Reproductive toxicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure (Inhalation)	:	Category 1 (hematopoietic system)

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

Aspiration hazard : Category 1

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H224 Extremely flammable liquid and vapor.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H340 May cause genetic defects.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs (hematopoietic system) through prolonged or repeated exposure if inhaled.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.

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

P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Gasoline; Low boiling point naphtha - unspecified	Gasoline; Low boiling point naphtha - unspecified	86290-81-5	80 - 100
toluene	toluene	108-88-3	<= 40
benzene	benzene	71-43-2	0.006 - 1.5
ethanol	ethanol	64-17-5	<= 0.3
methanol	methanol	67-56-1	<= 0.08

SECTION 4. FIRST AID MEASURES

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

In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash clothing before reuse.
Seek medical advice.

In case of eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Obtain medical attention.

Petro-Canada is a Suncor Energy business. ^TM^ Trademark of Suncor Energy Inc. Used under licence.

If swallowed	:	Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice.
Most important symptoms and effects, both acute and delayed	:	Respiratory, skin and eye irritation; nausea; cancer. Inhalation may cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Chronic exposure to benzene may result in increased risk of leukemia and other blood disorders.
An indication of immediate medical attention and special treatment needed, if necessary	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO2) Water fog. Foam
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during fire fighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO2), nitrogen oxides (NOx), polynuclear aromatic hydrocarbons, phenols, aldehydes, ketones, smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus and full protective wear. Wear a positive-pressure supplied-air respirator with full facepiece.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions. Mark the contaminated area with signs and prevent access to unauthorized personnel. Only qualified personnel equipped with suitable protective equipment may intervene.

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

Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Gasoline; Low boiling point naphtha -unspecified	86290-81-5	TWA	300 ppm	CA AB OEL
		STEL	500 ppm	CA AB OEL
		TWA	300 ppm	CA BC OEL
		STEL	500 ppm	CA BC OEL
		TWA	300 ppm	ACGIH
		STEL	500 ppm	ACGIH
toluene	108-88-3	TWA	20 ppm	CA BC OEL
		TWAEV	20 ppm	CA QC OEL
		TWA	50 ppm	CA AB OEL
		TWA	20 ppm	ACGIH

Petro-Canada is a Suncor Energy business. ^TM^ Trademark of Suncor Energy Inc. Used under licence.

benzene	71-43-2	TWA	0.5 ppm	CA BC OEL
		STEL	2.5 ppm	CA BC OEL
		TWA	0.5 ppm	CA ON OEL
		STEL	2.5 ppm	CA ON OEL
		TWAEV	0.5 ppm	CA QC OEL
		STEV	2.5 ppm	CA QC OEL
		TWA	0.5 ppm	CA AB OEL
		STEL	2.5 ppm	CA AB OEL
		TWA	0.02 ppm	ACGIH
		STEL	0.1 ppm	ACGIH
ethanol	64-17-5	STEL	1,000 ppm	CA BC OEL
		STEV	1,000 ppm	CA QC OEL
		TWA	300 ppm	CA AB OEL
		STEL	500 ppm	CA AB OEL
		STEL	1,000 ppm	ACGIH
methanol	67-56-1	TWA	200 ppm	CA BC OEL
		STEL	250 ppm	CA BC OEL
		TWA	200 ppm	CA AB OEL
		STEL	250 ppm	CA AB OEL
		TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection : Concentration in air determines protection needed.
Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection

Material : polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first

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

signs of hardening and cracks, they should be changed.

Remarks	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	:	Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	Clear liquid.
Color	:	Clear to slightly yellow or green, undyed liquid. May be dyed red for taxation purposes.
Odor	:	Gasoline
pH	:	No data available
Melting point and freezing point	:	No data available
Boiling point, or initial boiling point and boiling range	:	25 - 225 °C
Flash point	:	-50 - -38 °C Method: Tagliabue.
Flammability	:	Extremely flammable in presence of open flames and sparks. May accumulate static electrical charge. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back.
Upper explosion limit / Upper flammability limit	:	7.6 %(V)
Lower explosion limit / Lower flammability limit	:	1.3 %(V)
Vapor pressure	:	< 802.5 mmHg (20 °C)
Relative vapor density	:	3

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

Relative density	:	0.685 - 0.8
Density	:	No data available
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	257 °C
Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available
Particle characteristics		
Particle size	:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents, acids and interhalogens.
Hazardous decomposition products	:	May release COx, NOx, phenols, polycyclic aromatic hydrocarbons, aldehydes, ketones, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

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

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: > 20 mg/L Exposure time: 4 h Test atmosphere: vapor Method: Calculation method

Petro-Canada is a Suncor Energy business. ^TM^ Trademark of Suncor Energy Inc. Used under licence.

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Components:

Gasoline; Low boiling point naphtha -unspecified:

Acute oral toxicity : LD50 (Rat): 13,600 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 3,750 mg/kg

toluene:

Acute oral toxicity : LD50 (Rat): 5,580 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rabbit): 12,125 mg/kg

benzene:

Acute oral toxicity : LD50 (Rat): 2,990 mg/kg

Acute inhalation toxicity : LC50 (Rat): 13700 ppm
Exposure time: 4 h
Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rabbit): > 8,240 mg/kg

ethanol:

Acute oral toxicity : LD50 (Rat): 7,060 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 32380 ppm
Exposure time: 4 h
Test atmosphere: vapor

methanol:

Acute oral toxicity : LD50 (Rat): 5,600 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 15,800 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

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

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

Respiratory or skin sensitization

Skin sensitization
Based on available data, the classification criteria are not met.

Respiratory sensitization
Based on available data, the classification criteria are not met.

Germ cell mutagenicity
May cause genetic defects.
May cause cancer.

Reproductive toxicity
Suspected of damaging fertility or the unborn child.

STOT-single exposure
May cause drowsiness or dizziness.

STOT-repeated exposure
Causes damage to organs (hematopoietic system) through prolonged or repeated exposure if inhaled.

Aspiration toxicity
May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae/aquatic plants	:	Remarks: No data available
Toxicity to microorganisms	:	Remarks: No data available

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects
No data available

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

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labeled prior to recycling or disposal. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
Contaminated packaging	:	Contact local or business unit authorities for guidance on disposal of product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 1203
Proper shipping name	:	Gasoline
Class	:	3
Packing group	:	II
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	364

IMDG-Code

UN number	:	UN 1203
Proper shipping name	:	GASOLINE
Class	:	3
Packing group	:	II
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	yes

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

Not applicable for product as supplied.

Domestic regulation

TDG

UN number	:	UN 1203
Proper shipping name	:	GASOLINE
Class	:	3
Packing group	:	II
Labels	:	3
ERG Code	:	128
Marine pollutant	:	yes

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

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

NPRI Components : toluene
benzene
ethanol
methanol
xylene
Naphtha (petroleum), hydrotreated heavy; Low boiling point hydrogen treated naphtha
ethylbenzene
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified
naphthalene
1,2,4-trimethylbenzene

The ingredients of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
CA AB OEL / STEL	:	Short term exposure limit
CA AB OEL / TWA	:	Time weighted average
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA AB OEL / STEL	:	15-minute occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA BC OEL / STEL	:	short-term exposure limit
CA ON OEL / TWA	:	Time-Weighted Average Limit (TWA)
CA ON OEL / STEL	:	Short-Term Exposure Limit (STEL)
CA QC OEL / TWAEV	:	Time-weighted average exposure value

Petro-Canada is a Suncor Energy business. ^TM^ Trademark of Suncor Energy Inc. Used under licence.

CA QC OEL / STEV : Short-term exposure value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Revision Date : 2025/02/05

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

CA / EN

Petro-Canada is a Suncor Energy business. ^TM^ Trademark of Suncor Energy Inc. Used under licence.

SAFETY DATA SHEET

{ error: graphic file not found: E:\WWI\graphics

DIESEL FUEL

SDS Number: 000003000395

Version: 9.0 Revision Date: 2025/02/13 Print Date: 2025/02/14

SECTION 1. IDENTIFICATION

Product name	:	DIESEL FUEL
Product code	:	10582, 11803, 11802, 11798, 12016, 11958, 11796, 11771, 11770, 11769, 11768, 11767, 11766, 11612, 11560, 11558, 11555, 11437, 11302, 10979, 10978, 10977, 10976, 10975, 10974, 10973, 10972, 10971, 10970, 10969, 10968, 10966, 10965, 10964, 10786, 10785, 10784, 10783, 10690, 10689, 10687, 10636, 10635, 10626, 10621, 10616, 10610, 10601, 10600, 10598, 10595, 10427, 10041
Other means of identification	:	Seasonal Diesel, #2 Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, OSX, D50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend (BX where X is representative of volume %), Renewable Diesel blend (RX where X is represent ative of volume %), Diesel Low Cloud (LC), Marine Gas Oil, Marine Gas Oil Dyed,Type A Diesel, Type B Diesel.

Manufacturer or supplier's details

Company name of supplier	:	Petro-Canada
Address	:	P.O. Box 2844, 150 - 6th Avenue South-West Calgary, Alberta T2P 3E3 Canada, Telephone: 1-866-786-2671
Emergency telephone	:	CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887; ^CR^Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

Recommended use	:	Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining diesels, marine diesels, marine diesel oil, marine gas oil and naval distillates may have a higher flash point requirement.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Flammable liquids	:	Category 3
Acute toxicity (Inhalation)	:	Category 4
Skin irritation	:	Category 2

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

Eye irritation	:	Category 2B
Carcinogenicity	:	Category 2
Specific target organ toxicity - repeated exposure	:	Category 2 (Liver, thymus, Bone)
Aspiration hazard	:	Category 1

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements :

H226 Flammable liquid and vapor.
H304 May be fatal if swallowed and enters airways.
H315 + H320 Causes skin and eye irritation.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.
H373 May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/

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

doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Fuels, diesel; Gasoil — unspecified	Fuels, diesel; Gasoil — unspecified	68334-30-5	25 - 100
Alkanes, C10-20-branched and linear	Alkanes, C10-20-branched and linear	928771-01-1	<= 75
Fatty acids, C14-18 and C14-18-unsatd., Me esters	Fatty acids, C14-18 and C14-18-unsatd., Me esters	129756-24-7	<= 20
Fuel oil No. 2	Fuel oil No. 2	68476-30-2	<= 0.2

SECTION 4. FIRST AID MEASURES

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

In case of skin contact : In case of contact, immediately flush skin with plenty of water

Petro-Canada is a Suncor Energy business. ^TM^ Trademark of Suncor Energy Inc. Used under licence.

		for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Seek medical advice.
In case of eye contact	:	Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	:	Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice.
Most important symptoms and effects, both acute and delayed	:	Harmful if inhaled. Respiratory, skin and eye irritation; nausea; cancer.
An indication of immediate medical attention and special treatment needed, if necessary	:	Treat symptomatically. For specialist advice physicians should contact the Poisons Information Service.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO2) Water fog. Foam
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during fire fighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions.

Petro-Canada is a Suncor Energy business. ^TM^ Trademark of Suncor Energy Inc. Used under licence.

Mark the contaminated area with signs and prevent access to unauthorized personnel.
Only qualified personnel equipped with suitable protective equipment may intervene.

Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.

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

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Use only with adequate ventilation.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.
Avoid contact with skin, eyes and clothing.
Do not ingest.
Keep away from heat and sources of ignition.
Keep container closed when not in use.

Conditions for safe storage : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labeled containers.
To maintain product quality, do not store in heat or direct sunlight.
Ensure the storage containers are grounded/bonded.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Fuels, diesel; Gasoil — unspecified	68334-30-5	TWA	100 mg/m³ (total hydrocarbons)	CA AB OEL
		TWA (inhalable fraction	100 mg/m³ (total hydrocar-	CA BC OEL

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

		and vapour)	bons)	
		TWAEV (inhalable fraction and vapour)	100 mg/m³ (total hydrocarbons)	CA QC OEL
		TWA (Inhalable fraction and vapor)	100 mg/m³ (total hydrocarbons)	ACGIH
Fuel oil No. 2	68476-30-2	TWA (Inhalable fraction and vapor)	100 mg/m³ (total hydrocarbons)	CA AB OEL
		TWA (Inhalable fraction and vapor)	100 mg/m³ (total hydrocarbons)	CA BC OEL
		TWAEV (Inhalable fraction and vapor)	100 mg/m³ (total hydrocarbons)	CA QC OEL
		TWA (Inhalable fraction and vapor)	100 mg/m³ (total hydrocarbons)	CA ON OEL
		TWA (Inhalable fraction and vapor)	100 mg/m³ (total hydrocarbons)	ACGIH

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection : Concentration in air determines protection needed.
Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection

Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals.

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

		Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
Remarks	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	:	Wear safety glasses with side shields or goggles. Wear face-shield if splashing hazard is likely. Chemical splash goggles and a full-face shield should be worn when handling this material.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	Bright oily liquid.
Color	:	Clear to yellow (This product may be dyed red for taxation purposes)
Odor	:	Mild petroleum oil like.
pH	:	No data available
Melting point and freezing point	:	No data available
Boiling point, or initial boiling point and boiling range	:	150 - 371 °C
Flash point	:	> 40 °C Method: closed cup Marine Gas Oil/Naval Distillate: 60°C min Mining Diesel: 52°C min All other Diesel fuels: 40°C min
Flammability	:	Flammable liquid
Upper explosion limit / Upper flammability limit	:	6 %(V)

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

Lower explosion limit / Lower flammability limit	:	0.7 %(V)
Vapor pressure	:	7.5 mmHg (20 °C)
Relative vapor density	:	4.5
Relative density	:	0.8 - 0.88
Density	:	No data available
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	204 °C
Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	1.3 - 4.1 cSt (40 °C)
Particle characteristics		
Particle size	:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable at normal ambient temperature and pressure.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents and acids.
Hazardous decomposition products	:	May release COx, NOx, SOx, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

Harmful if inhaled.

Product:

Acute oral toxicity : Remarks: Based on available data, the classification criteria

Petro-Canada is a Suncor Energy business. ^TM^ Trademark of Suncor Energy Inc. Used under licence.

are not met.

Acute inhalation toxicity	:	Acute toxicity estimate: 11 mg/L Exposure time: 4 h Test atmosphere: vapor Method: Calculation method
Acute dermal toxicity	:	Remarks: Based on available data, the classification criteria are not met.

Components:

Fuels, diesel; Gasoil — unspecified:

Acute oral toxicity	:	LD50 (Rat): 7,500 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 4.1 mg/l Exposure time: 4 h Test atmosphere: vapor
Acute dermal toxicity	:	LD50 (Mouse): 24,500 mg/kg

Fuel oil No. 2:

Acute oral toxicity	:	LD50 (Rat): 12,000 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes eye irritation.

Respiratory or skin sensitization

Skin sensitization

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

Respiratory sensitization

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

Germ cell mutagenicity

Based on available data, the classification criteria are not met.
Suspected of causing cancer.

Reproductive toxicity

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

STOT-single exposure

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

STOT-repeated exposure

May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

Aspiration toxicity

May be fatal if swallowed and enters airways.

Petro-Canada is a Suncor Energy business. ^TM^ Trademark of Suncor Energy Inc. Used under licence.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae/aquatic plants	:	Remarks: No data available
Toxicity to microorganisms	:	Remarks: No data available

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labeled prior to recycling or disposal. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
Contaminated packaging	:	Contact local or business unit authorities for guidance on disposal of product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

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

IATA-DGR

UN/ID No.	:	UN 1202
Proper shipping name	:	Diesel fuel
Class	:	3
Packing group	:	III
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	366

IMDG-Code

UN number	:	UN 1202
Proper shipping name	:	DIESEL FUEL
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	yes

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

Not applicable for product as supplied.

Domestic regulation

TDG

UN number	:	UN 1202
Proper shipping name	:	DIESEL FUEL
Class	:	3
Packing group	:	III
Labels	:	3
ERG Code	:	128
Marine pollutant	:	yes

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

NPRI Components : Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified
naphthalene
1,2,4-trimethylbenzene
toluene
propan-2-ol
methanol

The ingredients of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

Canadian lists

No substances are subject to a Significant New Activity Notification.

Petro-Canada is a Suncor Energy business. ^TM^ Trademark of Suncor Energy Inc. Used under licence.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	:	8-hour time weighted average
CA AB OEL / TWA	:	8-hour time weighted average
CA BC OEL / TWA	:	8-hour time weighted average
CA ON OEL / TWA	:	8-hour time weighted average
CA QC OEL / TWAEV	:	Time-weighted average exposure value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Petro-Canada is a Suncor Energy business. ^TM^ Trademark of Suncor Energy Inc. Used under licence.

Revision Date : 2025/02/13

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

CA / EN

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

Section 1: IDENTIFICATION

Product Name: Propane

Synonyms: LPG (Liquefied Petroleum Gas); LP-Gas.

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

Restrictions on Use: Not available.

Manufacturer/Supplier: Superior Propane
Suite 400, 6750 Century Avenue
Mississauga, ON L5N 2V8

Phone Number: 1-877-873-7467

Emergency Phone: CANUTEC 1-888-CAN-UTEC (226-8832) or 613-996-6666 or *666 on a cellular phone

Date of Preparation of SDS: September 17, 2021

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Flammable Gases, Category 1
Gases Under Pressure - Compressed Gas
Simple Asphyxiant, Category 1

LABEL ELEMENTS

Hazard Pictogram(s):



Signal Word: Danger

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

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response: Leaking gas fire: Do not extinguish unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.

Storage: Store in a well ventilated place.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200). This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% vol./vol.
Propane	Not available.	74-98-6	90 - 99
Ethane	Not available.	74-84-0	0 - 5
1-Propene	Propylene	115-07-1	0 - 5
Butane	Not available.	106-97-8	0 - 2.5

Section 4: FIRST-AID MEASURES

Inhalation:

Call a poison center or doctor if you feel unwell.

Acute and delayed symptoms and effects: May displace oxygen and cause rapid suffocation. Central nervous system depression can occur if product is present in concentrations that will reduce the oxygen content of air below 18 % (vol). Symptoms may include headache, lightheadedness, drowsiness, disorientation, vomiting and seizures. Unconsciousness and death may occur with severe oxygen deprivation. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact:

Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if needed. Continue rinsing. Immediately call a poison center or doctor.

Acute and delayed symptoms and effects: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. The pain after contact with liquid can quickly subside. Permanent eye damage or blindness could result.

Skin Contact:

Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. If on skin: Wash with plenty of water. Get immediate medical advice/attention. Thaw frosted parts with lukewarm water. Do not rub affected area. Remove non-adhering contaminated clothing. Do not remove adherent material or clothing.

Acute and delayed symptoms and effects: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Symptoms of frostbite include change in skin colour to white or grayish-yellow. The pain after contact with liquid can quickly subside.

Ingestion:

Not a normal route of exposure.

Acute and delayed symptoms and effects: Not a normal route of exposure.

General Advice:

In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians:

Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Extremely flammable gas. Contains gas under pressure; may explode if heated. Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. Vapors from liquefied gas are initially heavier than air and spread along ground. Vapors may travel to source of ignition and flash back. Cylinders exposed to fire may vent and release flammable gas through pressure relief devices. Containers may explode when heated. Ruptured cylinders may rocket. DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

If a tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

Fire involving Tanks: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discolouration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Sensitivity to Mechanical Impact:	This material is not sensitive to mechanical impact.
Sensitivity to Static Discharge:	This material is sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media:	Small Fire: Dry chemical or CO2. Large Fire: Water spray or fog. Move containers from fire area if you can do it without risk.
Unsuitable Extinguishing Media:	Not available.
Products of Combustion:	Oxides of carbon.
Protection of Firefighters:	Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Vapors may cause dizziness or asphyxiation without warning. Some may be irritating if inhaled at high concentrations. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Fire may produce irritating and/or toxic gases. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection. Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures:	As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Keep out of low areas. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded.

Personal Precautions:	Do not touch or walk through spilled material. Use personal protection recommended in Section 8.
Environmental Precautions:	Not normally required.
Methods for Containment:	Stop leak if you can do it without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Do not direct water at spill or source of leak.
Methods for Clean-Up:	Prevent spreading of vapors through sewers, ventilation systems and confined areas. Isolate area until gas has dispersed. CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.
Other Information:	See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Avoid breathing gas. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Pressurized container: Do not pierce or burn, even after use. See Section 8 for information on Personal Protective Equipment.

Storage:
Store in a well-ventilated place. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines
Component

Propane [CAS No. 74-98-6]

ACGIH: Simple asphyxiant; Explosion hazard
OSHA: 1000 ppm (TWA), 1800 mg/m³ (TWA);

Ethane [CAS No. 74-84-0]

ACGIH: Simple asphyxiant; Explosion hazard
OSHA: No PEL established.

Propylene [CAS No. 115-07-1]

ACGIH: 500 ppm (TWA); A4 (2005)
OSHA: No PEL established.

Butane [CAS No. 106-97-8]

ACGIH: 1000 ppm (STEL); Explosion hazard (2012)
OSHA: 800 ppm (TWA) [Vacated];

PEL: Permissible Exposure Limit
TWA: Time-Weighted Average
C: Ceiling

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear safety glasses. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection: Wear insulated neoprene gloves. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear protective clothing.

Respiratory Protection: If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquefied gas.
Colour:	Colourless.
Odour:	Odourless, unless odourized with ethyl mercaptan (skunky odour, similar to boiling cabbage).
Odour Threshold:	4800 ppm
Physical State:	Gas.
pH:	Not available.
Melting Point / Freezing Point:	-188 °C (-306.4 °F)
Initial Boiling Point:	-42.2 °C (-44 °F)
Boiling Point:	-42 °C (-43.6 °F)
Flash Point:	-103.4 °C (-154.1 °F) (Closed Cup)
Evaporation Rate:	Rapid.
Flammability (solid, gas):	Extremely flammable gas.

Lower Flammability Limit:	2.1%
Upper Flammability Limit:	9.5%
Vapor Pressure:	1435 kPa (maximum) at 37.8 °C (100 °F)
Vapor Density:	1.52 (Air = 1)
Relative Density:	0.51 (Water = 1)
Solubilities:	Slight, 6.1% by volume @ 17.8°C (64 °F)
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	432 °C (809.6 °F)
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	Not available.
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Sources of ignition. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	Gas explodes spontaneously when mixed with chloride dioxide.
Conditions to Avoid:	Contact with incompatible materials. Sources of ignition. Exposure to heat.
Incompatible Materials:	Oxidizers. Chlorine dioxide.
Hazardous Decomposition Products:	Carbon dioxide. Carbon monoxide.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE
Product Toxicity

Oral:	Not available.
Dermal:	Not available.
Inhalation:	Not available.

Component Toxicity

Component	CAS No.	LD_{50} oral	LD_{50} dermal	LC_{50}
Propane	74-98-6	Not available.	Not available.	Not available.
Ethane	74-84-0	Not available.	Not available.	Not available.
Propylene	115-07-1	Not available.	Not available.	86000 mg/m³ (rat); 4H
Butane	106-97-8	Not available.	Not available.	658000 mg/m³ (rat); 4H

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation.

Target Organs: Skin. Eyes. Respiratory system. Central nervous system.

Symptoms (including delayed and immediate effects)

Inhalation:

May displace oxygen and cause rapid suffocation. Central nervous system depression can occur if product is present in concentrations that will reduce the oxygen content of air below 18 % (vol). Symptoms may include headache, lightheadedness, drowsiness, disorientation, vomiting and seizures. Unconsciousness and death may occur with severe oxygen deprivation. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. The pain after contact with liquid can quickly subside. Permanent eye damage or blindness could result.

Skin: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Symptoms of frostbite include change in skin colour to white or grayish-yellow. The pain after contact with liquid can quickly subside.

Ingestion: Not a normal route of exposure.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Respiratory system. Central nervous system.

Chronic Effects: Not available.

Carcinogenicity: Product is not classified as a carcinogen. See Component Carcinogenicity table below for information on individual components.

Component Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Prop 65
Propylene	A4	Group 3	Not listed.	Not listed.	Not listed.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: UN1075, LIQUEFIED PETROLEUM GASES, 2.1

Class: 2.1

UN Number: UN1075

Packing Group: Not applicable.

Label Code:



Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN1075, LIQUEFIED PETROLEUM GASES, 2.1

Class: 2.1

UN Number: UN1075

Packing Group: Not applicable.

Label Code:



Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)
The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations
United States
This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Propane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000
Ethane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000
Propylene	Not listed.	Not listed.	Not listed.	313	Not listed.	10000
Butane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000

State Regulations
Massachusetts
US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Propane	74-98-6	Listed.
Ethane	74-84-0	Listed.
Propylene	115-07-1	Listed.
Butane	106-97-8	Listed.

New Jersey
US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Propane	74-98-6	SHHS
Ethane	74-84-0	SHHS
Propylene	115-07-1	SHHS
Butane	106-97-8	SHHS

Note: SHHS = Special Health Hazard Substance

Pennsylvania
US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Propane	74-98-6	Listed.
Ethane	74-84-0	Listed.
Propylene	115-07-1	E
Butane	106-97-8	Listed.

Note: E = Environmental Hazard

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS:	September 17, 2021
Version:	2.0
GHS SDS Prepared by:	**Deerfoot Consulting Inc.**
	Phone: (403) 720-3700

SECTION 1. IDENTIFICATION

Product name	:	JET A/A-1 AVIATION TURBINE FUEL
Synonyms	:	Jet A-1; Jet A-1-DI; Aviation Turbine Kerosene (ATK); JP-8; NATO F-34; Jet F-34; Aviation Turbine Fuel, Kerosene Type (CAN/CGSB 3.23 & CAN/CGSB 3.24)
Product code	:	101851, 100123
Manufacturer or supplier's details		Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary Alberta T2P 3E3 Canada
Emergency telephone number		Suncor Energy: +1 403-296-3000; Canutec Transportation: 1-888-226-8832 (toll-free) or 613-996-6666; Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use	:	Used as aviation turbine fuel. May contain a fuel system icing inhibitor. In the arctic, Jet A-1 may also be used as diesel fuel (if it contains a lubricity additive) and heating oil.
Prepared by	:	Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

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

GHS Classification

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

TM Trademark of Suncor Energy Inc. Used under licence.

GHS label elements

Hazard pictograms :



Signal word : Danger

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

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

Potential Health Effects

Primary Routes of Entry : Eye contact
Ingestion

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

Inhalation
Skin contact

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

Skin : May irritate skin.

Eyes : May irritate eyes.

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

Aggravated Medical Condition : None known.

Other hazards

None known.

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

ACGIH Confirmed animal carcinogen with unknown relevance to humans

Kerosene 8008-20-6

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

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

SECTION 4. FIRST AID MEASURES

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

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

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

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

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO2) Water fog. Foam
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during firefighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

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

SECTION 7. HANDLING AND STORAGE

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
kerosine (petroleum)	8008-20-6	TWA	200 mg/m3 (total hydrocarbon vapor)	CA BC OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	CA AB OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH

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

TM Trademark of Suncor Energy Inc. Used under licence.

Personal protective equipment

Respiratory protection	:	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Filter type	:	A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.
Hand protection		
Material	:	polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
Remarks	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	:	Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

Odour Threshold	:	No data available
pH	:	No data available
Pour point	:	-51 °C (-60 °F)No data available
Boiling point/boiling range	:	140 - 300 °C (284 - 572 °F)
Flash point	:	> 38 °C (100 °F) Method: Tagliabue
Auto-Ignition Temperature	:	210 °C (410 °F)
Evaporation rate	:	No data available
Flammability	:	Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite. May accumulate in confined spaces.
Upper explosion limit	:	5 %(V)
Lower explosion limit	:	0.7 %(V)
Vapour pressure	:	5.25 mmHg (20 °C / 68 °F)
Relative vapour density	:	4.5
Relative density	:	0.775 - 0.84 (15 °C / 59 °F)
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, kinematic	:	1.0 - 1.9 cSt (40 °C / 104 °F)
Explosive properties	:	Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire.

SECTION 10. STABILITY AND REACTIVITY

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

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

Incompatible materials	:	Reactive with oxidising agents, acids and alkalis.
Hazardous decomposition products	:	May release COx, NOx, SOx, aldehydes, acids, ketones, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

Product:

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

Components:

kerosine (petroleum):

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

Skin corrosion/irritation

Product:
Remarks: No data available

Serious eye damage/eye irritation

Product:
Remarks: No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity
No data available

Carcinogenicity

No data available

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

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

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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

Petro-Canada is a Suncor Energy business.

TM Trademark of Suncor Energy Inc. Used under licence.

Contaminated packaging : Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

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

IMDG-Code

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

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

National Regulations

TDG

UN number	:	UN 1863
Proper shipping name	:	FUEL, AVIATION, TURBINE ENGINE
Class	:	3
Packing group	:	III
Labels	:	3
ERG Code	:	128
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

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

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

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

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

SECTION 16. OTHER INFORMATION

For Copy of SDS	:	Internet: www.petro-canada.ca/msds Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228 For Product Safety Information: 1 905-804-4752
Prepared by	:	Product Safety: +1 905-804-4752
Revision Date	:	2018/06/07

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

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

PETRO-CANADA

Material Safety Data Sheet

WHMIS (Pictograms)	WHMIS (Classification)	Protective Clothing	TDG (pictograms)
	**Not controlled**		

Section 1. Chemical Product and Company Identification

Product Name	**RELIANCE AW HYDRAULIC OIL 32, 46, 68**	**Code**	490-143, RELAW32 490-144, RELAW46 490-145, RELAW68
Synonym	Not available.	**Validated on**	**6/15/2001.**
Manufacturer	PETRO-CANADA P.O. Box 2844 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).
Material Uses	These products are designed for use as heavy duty hydraulic power transmission fluids and for lubrication where good anti-wear and anti-oxidation properties are required. They would typically be used in high-pressure hydraulic systems, machine tools, presses, compressors, pumps, gear sets, and centralized bearing lubrication systems in industrial plants and at mining and woodlands sites.		

Section 2. Composition and Information on Ingredients

			Exposure Limits (ACGIH)		
Name	**CAS #**	**% (V/V)**	**TLV-TWA(8 h)**	**STEL**	**CEILING**
1) Severely hydrotreated hydrocarbon oil and additives	Mixture	100	5 mg/m³ (oil mist)	10 mg/m³ (oil mist)	Not established

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

Section 3. Hazards Identification.

Potential Health Effects	Non irritating to slight transient irritation to skin and eyes, but no permanent damage. Relatively non-toxic via ingestion. This product has a low vapour pressure and is not expected to present an inhalation exposure at ambient conditions. Upon heating to high temperatures, or mechanical actions which may produce vapours or mists, inhalation of product may cause irritation of the breathing passages. For more information, refer to Section 11.

Section 4. First Aid Measures

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

Section 5. Fire-fighting Measures

Flammability	May be combustible at high temperature.	**Flammable Limits**	Not available.
Flash Points	OPEN CUP: ≥196°C (384.8°F) (Cleveland)	**Auto-Ignition Temperature**	Not available.
Fire Hazards in Presence of Various Substances	Low fire hazard. This material must be heated before ignition will occur.	**Explosion Hazards in Presence of Various Substances**	Containers may explode in heat of fire. Do not cut, weld, heat, drill or pressurize empty container.
Products of Combustion	Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), smoke and irritating vapours as products of incomplete combustion.		

Continued on Next Page

Available in French

Fire Fighting Media and Instructions	NAERG96, GUIDE 171, Substances (low to moderate hazard). If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (0.5 mile) in all directions; also, consider initial evacuation for 800 meters (0.5 mile) in all directions. Shut off fuel to fire if it is possible to do so without hazard. If this is impossible, withdraw from area and let fire burn out under controlled conditions. Withdraw immediately in case of rising sound from venting safety device or any discolouration of tank due to fire. Cool containing vessels with water spray in order to prevent pressure build-up, autoignition or explosion. SMALL FIRE: use DRY chemicals, foam, water spray or CO2. LARGE FIRE: use water spray, fog or foam. For small outdoor fires, portable fire extinguishers may be used, and self contained breathing apparatus (SCBA) may not be required. For all indoor fires and any significant outdoor fires, SCBA is required. Respiratory and eye protection are required for fire fighting personnel.

Section 6. Accidental Release Measures

Material Release or Spill	NAERG96, GUIDE 171, Substances (low to moderate hazard). ELIMINATE ALL IGNITION SOURCES. Avoid contact. Stop leak if without risk. Contain spill. Absorb with inert absorbents, dry clay, or diatomaceous earth. Avoid inhaling dust of diatomaceous earth for it may contain silica in very fine particle size, making this a potential respiratory hazard. Place used absorbent in closed metal containers for later disposal or burn absorbent in a suitable combustion chamber. DO NOT FLUSH TO SEWERS, STREAMS OR OTHER BODIES OF WATER. Check with applicable jurisdiction for specific disposal requirements of spilled material and empty containers. Notify the appropriate authorities immediately.

Section 7. Handling and Storage

Handling	Avoid inhalation and skin contact especially when handling used oil. Keep away from sources of ignition. DO NOT reuse empty containers without commercial cleaning or reconditioning. Practice good personal hygiene. Wash hands after handling and before eating. Launder work clothes frequently. Discard saturated leather goods.
Storage	Store in tightly closed containers in cool, dry, isolated, well-ventilated area, and away from incompatibles.

Section 8. Exposure Controls/Personal Protection

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

Section 9. Physical and Chemical Properties

Physical State and Appearance	Viscous liquid	**Viscosity**	32: 32.0 cSt @ 40°C, 5.35 cSt @ 100°C, VI=99 46: 46.0 cSt @ 40°C, 6.74 cSt @ 100°C, VI=99 68: 68.0 cSt @ 40°C, 8.69 cSt @ 100°C, VI=99
Colour	Pale, Light green.	**Pour Point**	32: -36°C 46: -33°C 68: -30°C
Odour	Hydrocarbon.	**Softening Point**	Not applicable.
Odour Threshold	Not available.	**Dropping Point**	Not applicable.
Boiling Point	Not available.	**Penetration**	Not applicable.
Density	0.8693 to 0.8740 kg/L @ 15°C (59°F).	**Oil / Water Dist. Coefficient**	Not available.
Vapour Density	Not available.	**Ionicity (in water)**	Not available
Vapour Pressure	Negligible at ambient temperature and pressure.	**Dispersion Properties**	Not available.
Volatility	Non-volatile.	**Solubility**	Insoluble in water.

Section 10. Stability and Reactivity

Corrosivity	Copper corrosion, 3h, 100°C (ASTM D0130): 1a		
Stability	The product is stable under normal handling and storage conditions.	**Hazardous Polymerization**	Will not occur under normal working conditions.
Incompatible Substances / Conditions to Avoid	Reactive with oxidizing agents and acids.	**Decomposition Products**	May release COx, SOx, H2S, POx, CaOx, ZnOx, methacrylate monomers, alkyl mercaptans, aldehydes, smoke and irritating vapours when heated to decomposition.

Section 11. Toxicological Information

Routes of Entry	Skin contact, eye contact, inhalation and ingestion.
Acute Lethality	Based on toxicity of components. Acute oral toxicity (LD50): >5000 mg/kg (rat). Acute dermal toxicity (LD50): >2000 mg/kg (rabbit).
Chronic or Other Toxic Effects	
Dermal Route:	Prolonged or repeated contact may cause skin irritation characterized by dermatitis or oil acne.
Inhalation Route:	Negligible breathing hazard at normal temperatures (up to 38°C) or recommended blending temperatures. Elevated temperatures or mechanical action may form vapours, mists or fumes. Inhalation of oil mists or vapours from hot oil may cause irritation of the upper respiratory tract.
Oral Route:	Low toxicity; has laxative effect.
Eye Irritation/Inflammation:	Repeated or prolonged contact may cause transient irritation, but no permanent damage.
Immunotoxicity:	Not available.
Skin Sensitization:	This product is not expected to be a skin sensitizer, based on the available data and the known hazards of the components.
Respiratory Tract Sensitization:	This product is not expected to be a respiratory tract sensitizer, based on the available data and the known hazards of the components.
Mutagenic:	Based on actual test results of base oils and results of similar products, severely hydrotreated base oils give negative results when tested for: (a) Salmonella Typhimurium TA98 using the Modified Ames Assay for Petroleum Product; (b) Salmonella-Escherichia coli/Mammalian-Microsome Reverse Mutation Assay (Ames test) with a Confirmatory Assay; (c) Structural Chromosomal Aberrations in Chinese Hamster Ovary (CHO) Cells.
Reproductive Toxicity:	This product is not expected to be a reproductive hazard, based on the available data and the known hazards of the components.
Teratogenicity/Embryotoxicity:	This product is not expected to be a teratogen or an embryotoxin, based on the available data and the known hazards of the components.
Carcinogenicity (ACGIH):	This product is not known to contain any chemicals at reportable quantities that are listed as A1 or A2 carcinogens by ACGIH.
Carcinogenicity (IARC):	This product is not known to contain any chemicals at reportable quantities that are listed as group 1, 2A or 2B carcinogens by IARC.
Carcinogenicity (NTP):	This product is not known to contain any chemicals at reportable quantities that are listed as carcinogens by NTP.
Carcinogenicity (IRIS):	Not available.
Carcinogenicity (OSHA):	This product is not known to contain any chemicals at reportable quantities that are listed as carcinogens by OSHA.
Other Considerations	No additional remark.

Section 12. Ecological Information

Environmental Fate	Not available	**Persistance/ Bioaccumulation Potential**	Not available
BOD5 and COD	Not available.	**Products of Biodegradation**	Not available.
Additional Remarks	No additional remark.		

Section 13. Disposal Considerations

Waste Disposal	Spent/used/waste oil may meet the requirements of a hazardous waste. Consult your local or regional authorities. Preferred waste management priorities are: (1) recycle or reprocess; (2) incineration with energy recovery; (3) disposal at licensed waste disposal facility. Ensure that disposal or reprocessing is in compliance with government requirements and local disposal regulations.

Section 14. Transport Information

TDG Classification	Not controlled under TDG (Canada).	**Special Provisions for Transport**	Not applicable.

Section 15. Regulatory Information

Other Regulations

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

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

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

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

Please contact Product Safety for more information.

DSD/DPD (Europe)	Not evaluated.	**HCS (U.S.A.)**	Not controlled under the HCS (United States).
ADR (Europe) (Pictograms)	**NOT EVALUATED FOR EUROPEAN TRANSPORT** **NON ÉVALUÉ POUR LE TRANSPORT EUROPÉEN.**	**DOT (U.S.A) (Pictograms)**	

HMIS (U.S.A.)

Health Hazard	1
Fire Hazard	1
Reactivity	0
Personal Protection	B

NFPA (U.S.A.)



Rating	
0	Insignificant
1	Slight
2	Moderate
3	High
4	Extreme

Section 16. Other Information

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

Glossary

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

For Copy of MSDS
Lubricants:
Western Canada, telephone: 1-800-661-1199; fax: (780) 464-9564
Ontario & Central Canada, telephone: 1-800-268-5850 and (905) 822-4222; fax: 1-800-201-6285
Quebec & Eastern Canada, telephone: 1-800-576-1686; fax: 800-201-6285

For Product Safety Information: (905) 804-4752

Prepared by Product Safety - TAR on 6/15/2001.

Data entry by Product Safety - JDW.

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

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo 100 Motor Oil SAE 40

Product Use: Heavy Duty Motor Oil
Product Number(s): 219932, 222404
Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

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

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION:
Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Distillates, hydrotreated heavy paraffinic	64742-54-7	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures
Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed
IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed Not Applicable

SECTION 5 FIRE FIGHTING MEASURES

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

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

SECTION 6 ACCIDENTAL RELEASE MEASURES

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

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: Keep out of the reach of children.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating

an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the workplace when designing engineering controls and selecting personal protective equipment (PPE). If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, refer to PPE information below.

Factors that affect PPE include, but are not limited to: properties of the chemical, other chemicals which may contact the same PPE, physical requirements (fit & sizing, cut/puncture protection, dexterity, thermal protection, etc.), and potential allergic reactions to the PPE material. It is the responsibility of the user to read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances. Refer to appropriate CEN standards.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.
Skin Protection: Wear chemical personal protective equipment (PPE) to prevent skin contact. Selection of chemical protective clothing should be performed by an Occupational Hygienist or Safety Professional and be based upon applicable standards (ASTM F739 or EN 374). Using chemical PPE depends upon operations conducted and may include chemical gloves, boots, chemical apron, chemical suit, and complete facial protection. Refer to PPE manufacturers to obtain breakthrough time information to determine how long PPE can be used before it needs to be replaced. Unless specific glove manufacturer data indicates otherwise, the below table is based upon available industry data to assist in the glove selection process and is intended to be used as reference only.

Chemical Glove Material	Thickness (mm)	Typical Breakthrough Time (minutes)
Butyl	0.7	120
Nitrile	0.8	240
Viton Butyl	0.3	240

Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	Form	TWA	STEL	Ceiling	Notation
Distillates, hydrotreated heavy paraffinic	ACGIH	Inhalable fraction	5 mg/m3	--	--	--
Distillates, hydrotreated heavy paraffinic	ACGIH	--	5 mg/m3	10 mg/m3	--	--
Distillates, hydrotreated heavy paraffinic	OSHA Z-1	--	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

Color: Brown to yellow
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: No data available
Vapor Density (Air = 1): No data available
Initial Boiling Point: No data available
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: No data available
Melting Point: No data available
Density: 0.8883 kg/l - 0.8892 kg/l @ 15°C (59°F) (Typical)
Viscosity: 131 mm2/s @ 40°C (104°F) (Typical)
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

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

Flashpoint: (Cleveland Open Cup) 180 °C (356 °F) (Minimum)
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: Not applicable
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The material is not considered an eye irritant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Skin Corrosion/Irritation: The material is not considered a skin irritant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Skin Sensitization: The material is not considered a skin sensitizer. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The material is not considered a dermal toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The material is not considered an oral toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The material is not considered an inhalation toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.
Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The material is not considered a mutagen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Carcinogenicity: The material is not considered a carcinogen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Reproductive Toxicity: The material is not considered a reproductive toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Specific Target Organ Toxicity - Single Exposure: The material is not considered a target organ toxicant (single exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Specific Target Organ Toxicity - Repeated Exposure: The material is not considered a target organ toxicant (repeated exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Aspiration Hazard: The material is not considered an aspiration hazard.

ADDITIONAL TOXICOLOGY INFORMATION:
During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).
These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is not expected to be harmful to aquatic organisms.
The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY
No data available.

PERSISTENCE AND DEGRADABILITY
This material is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

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

SECTION 13 DISPOSAL CONSIDERATIONS

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

SECTION 14 TRANSPORT INFORMATION

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

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

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

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

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

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: Not applicable

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	05=MA RTK
01-2A=IARC Group 2A	06=NJ RTK
01-2B=IARC Group 2B	07=PA RTK
02=NTP Carcinogen	08-1=TSCA 5(e)
03=EPCRA 313	08-2=TSCA 12(b)
04=CA Proposition 65	

The following components of this material are found on the regulatory lists indicated.
Distillates, hydrotreated heavy paraffinic 05, 07

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AIIC (Australia), DSL (Canada), ENCS (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States).

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

SECTION 16 OTHER INFORMATION

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

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

REVISION STATEMENT: SECTION 03 - Composition information was modified.
SECTION 08 - Eye/Face Protection information was modified.
SECTION 08 - General Considerations information was modified.
SECTION 08 - Occupational Exposure Limit Table information was modified.
SECTION 08 - Personal Protective Equipment List information was deleted.
SECTION 08 - Personal Protective Equipment information was added.
SECTION 08 - Skin Protection information was modified.
SECTION 15 - Regulatory Information information was added.

Revision Date: May 02, 2023

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

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

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

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

SAFETY DATA SHEET

PETRO-CANADA ANTIFREEZE

000003000606

Version 2.0 Revision Date 2016/03/07 Print Date 2016/03/07

SECTION 1. IDENTIFICATION

Product name	:	PETRO-CANADA ANTIFREEZE
Synonyms	:	Universal Antifreeze, Radiator Antifreeze, Diesel Antifreeze, Petro-Canada Antifreeze-Coolant, Petro-Canada Heavy Duty Antifreeze-Coolant, Pre-Mix Antifreeze, Petro-Canada Premium Radiator Antifreeze, Diesel Engine Coolant, Pre-Mixed Radiator Antifreeze/Coolant Petro-Canada.
Product code	:	RADDRX, RAD, RADC4U
Manufacturer or supplier's details		Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary Alberta T2P 3E3 Canada
Emergency telephone number		Suncor Energy: +1 403-296-3000; Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use	:	Used as an engine antifreeze coolant.
Prepared by	:	Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Clear liquid.
Colour	green
Odour	No data available
Hazard Summary	Toxic if swallowed. May cause teratogenicity/embryotoxicity

Potential Health Effects

Primary Routes of Entry	:	Eye contact Ingestion Inhalation Skin contact
Inhalation	:	May cause respiratory tract irritation.
Eyes	:	May cause eye irritation.

TM Trademark of Suncor Energy Inc. Used under licence.

Ingestion : Toxic if swallowed.
Ingestion of this product may cause Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.

Aggravated Medical Condition : None known.

Other hazards

None known.

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

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

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical Name	CAS-No.	Concentration
ethanediol	107-21-1	60 - 100 %

SECTION 4. FIRST AID MEASURES

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

In case of skin contact : In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash contaminated clothing before reuse.
Seek medical advice.

In case of eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Obtain medical attention.

If swallowed : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

Never give anything by mouth to an unconscious person.
Seek medical advice.

Most important symptoms and effects, both acute and delayed	:	First aider needs to protect himself.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Carbon dioxide (CO2) Dry chemical Foam
Unsuitable extinguishing media	:	No information available.
Specific hazards during fire-fighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO2), smoke and irritating vapours as products of incomplete combustion.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus and full protective wear. Wear a positive-pressure supplied-air respirator with full face-piece.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Smoking, eating and drinking should be prohibited in the application area. Do not ingest. Avoid contact with skin, eyes and clothing. Use only with adequate ventilation.

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

In case of insufficient ventilation, wear suitable respiratory equipment.
Ensure all equipment is electrically grounded before beginning transfer operations.
Keep away from heat and sources of ignition.
Keep container closed when not in use.

Conditions for safe storage : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labelled containers.
To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ethanediol	107-21-1	Ceiling	100 mg/m3	CA AB OEL
		TWA (particulate)	10 mg/m3	CA BC OEL
		STEL (particulate)	20 mg/m3	CA BC OEL
		Ceiling (aerosol)	100 mg/m3	CA BC OEL
		Ceiling (Vapour)	50 ppm	CA BC OEL
		Ceiling (Vapour and mist)	50 ppm 127 mg/m3	CA QC OEL
		Ceiling (Aerosol only)	100 mg/m3	ACGIH

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.

Personal protective equipment

Respiratory protection : 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.

Filter type : organic vapour filter

Hand protection
Material : nitrile rubber. 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

TM Trademark of Suncor Energy Inc. Used under licence.

material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Remarks	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	:	Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear liquid.
Colour	:	green
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	No data available
Melting point/range	:	-13 °C (9 °F)
Boiling point/boiling range	:	197 °C (387 °F)
Flash point	:	111 °C (232 °F) Method: closed cup
Fire Point	:	No data available
Auto-Ignition Temperature	:	398 °C (748 °F)
Evaporation rate	:	< 0.01
Flammability	:	May be combustible at high temperature.
Upper explosion limit	:	21.6 - 22.0 %(V)
Lower explosion limit	:	3.2 %(V)

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

Vapour pressure	:	0.09 mmHg (20 °C / 68 °F)
Relative vapour density	:	estimated 2.14 Air = 1
Relative density	:	1.12 - 1.15 (20 °C / 68 °F) Water = 1
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	log Pow: -1.36 (20 °C)
Viscosity		
Viscosity, kinematic	:	estimated 18.86 mm2/s (20 °C / 68 °F)
Explosive properties	:	Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	:	Hazardous polymerisation does not occur. Stable under normal conditions.
Conditions to avoid	:	Heat, flames and sparks. Avoid temperatures above 111°C.
Incompatible materials	:	Reactive with oxidising agents, acids and alkalis.
Hazardous decomposition products	:	May release COx, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

Product:

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

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

Components:

ethanediol:

Acute oral toxicity	:	LD50 (Rat): 4,700 mg/kg, LD50 (Mouse): 5,500 mg/kg,
Acute inhalation toxicity	:	LC50 (Rat): 2.725 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): 9,530 mg/kg,

Skin corrosion/irritation

Components:

ethanediol:

Result: Mild skin irritation

Serious eye damage/eye irritation

Components:

ethanediol:

Result: Mild eye irritation

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: No data available

Petro-Canada is a Suncor Energy business.

TM Trademark of Suncor Energy Inc. Used under licence.

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

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

Components:

ethanediol :

Partition coefficient: n-octanol/water	:	log Pow: -1.36

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information	:	No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

Not regulated as a dangerous good

Petro-Canada is a Suncor Energy business.

TM Trademark of Suncor Energy Inc. Used under licence.

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

National Regulations

TDG
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

WHMIS Classification : D1B: Toxic Material Causing Immediate and Serious Toxic Effects
D2A: Very Toxic Material Causing Other Toxic Effects

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

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

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

SECTION 16. OTHER INFORMATION

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

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

Revision Date : 2016/03/07

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

Petro-Canada is a Suncor Energy business.
TM Trademark of Suncor Energy Inc. Used under licence.

SAFETY DATA SHEET

1. Identification

Product identifier	Lead Acid Battery Wet, Filled With Acid
Other means of identification	
Synonyms	may include gel/absorbed electrolyte type lead acid batteries
Recommended use	Electric storage battery.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier	East Penn Manufacturing Company, Inc.
Address	102 Deka Road, Lyon Station PA 19536
Telephone number	(610) 682-6361
Contact person	East Penn EHS Department
Emergency telephone number	USA/Canada: CHEMTREC (800) 424-9300, Outside USA 1 (703) 527-3887
E-mail	contactus@eastpenn-deka.com

2. Hazard(s) identification

Physical hazards	Explosive Chemical, Division 1.3	
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 1A
	Reproductive toxicity	Category 1A
	Specific target organ toxicity following single exposure	Category 1 (respiratory system)
	Specific target organ toxicity following single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity following repeated exposure	Category 1 (respiratory system)
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

Label elements



Signal word	Danger
Hazard statement	Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May cause cancer. May damage fertility or the unborn child. Causes damage to organs (respiratory system). Causes damage to organs (respiratory system) through prolonged or repeated exposure. May cause respiratory irritation. Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not breathe dust/mist/vapours. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor. Wash contaminated clothing before reuse. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed.
Disposal	Refer to manufacturer/supplier for information on recovery/recycling. Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.
Supplemental information	In use, may form flammable/explosive vapour-air mixture.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Lead and lead compounds (inorganic)	7439-92-1	43 - 70
Electrolyte (Sulfuric acid)	7664-93-9	20 - 44
Antimony	7440-36-0	3 - 5

Composition comments	All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Content composition concentrations will vary with battery type/size.

4. First-aid measures

Inhalation	Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person under observation. Get medical attention if any discomfort continues.
Skin contact	Exposure to contents of an open or damaged battery: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops and persists.
Eye contact	Exposure to contents of an open or damaged battery: Flush thoroughly with water for at least 15 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Get medical attention if irritation develops and persists.
Ingestion	Exposure to contents of an open or damaged battery: Rinse mouth thoroughly with water. DO NOT induce vomiting because of danger of aspirating liquid into lungs. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Dry chemical, foam, carbon dioxide, water fog.
Unsuitable extinguishing media	Do NOT use water on live electrical circuits.
Specific hazards arising from the chemical	Batteries evolve flammable hydrogen gas during charging and may increase fire risk. Containers may explode when heated.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of corrosive and flammable materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid contact with skin.
Methods and materials for containment and cleaning up	Neutralize the spilled material before disposal. Sweep up or vacuum up spillage and collect in suitable container for disposal. Dispose of waste and residues in accordance with local authority requirements.
Environmental precautions	Prevent runoff from entering drains, sewers, or streams.

7. Handling and storage

Precautions for safe handling	In the event of damage resulting in a leak of exposed materials, avoid contact with contents of an open or damaged cell or battery. Keep away from heat, sparks and open flame. Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Protect containers from damage. Place cardboard between layers of stacked batteries to avoid damage and short circuits.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m3	

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m3
	TWA	1 mg/m3
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m3	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m3	

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m3	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m3	

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m3
	TWA	1 mg/m3
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Lead and lead compounds (inorganic) (CAS 7439-92-1)	200 µg/l	Lead	Blood	*

* - For sampling details, please see the source document.

Appropriate engineering controls Provide adequate ventilation. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection None under normal conditions. Leak from a damaged or opened battery: Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection None under normal conditions. Leak from a damaged or opened battery: Wear appropriate chemical resistant gloves.

Other None under normal conditions. Leak from a damaged or opened battery: Wear suitable protective clothing. Use of an impervious apron is recommended.

Respiratory protection None under normal conditions.

Thermal hazards When material is heated, wear gloves to protect against thermal burns.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Solid.

Form Sulfuric acid, liquid. Lead, solid.

Colour Not available.

Odour Odourless.

Odour threshold Not available.

pH < 1

Melting point/freezing point Not available.

Initial boiling point and boiling range 112.78 - 115.56 °C (235 - 240 °F) (Sulfuric acid)

Flash point Below room temperature (as hydrogen gas).

Evaporation rate < 1 (n-BuAc=1)

Flammability (solid, gas)

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 4 % (Hydrogen)

Flammability limit - upper (%)	74 % (Hydrogen)
Vapour pressure	10 mm Hg
Vapour density	> 1 (Air = 1)
Relative density	1.27 - 1.33
Solubility(ies)	
Solubility (water)	100 % (Sulfuric acid)
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity Chemical	The product is non-reactive under normal conditions of use, storage and transport.
stability Possibility of	Stable at normal conditions.
hazardous reactions	Will not occur.
Conditions to avoid	Overcharging. Ignition sources.
Incompatible materials	Strong bases. Combustible organic materials. Reducing Agents. Finely divided metals. Strong oxidizers. Water.
Hazardous decomposition products	Sulfur dioxide. Sulfur trioxide. Carbon monoxide. Sulfuric acid. Hydrogen.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Exposure to contents of an open or damaged battery: Harmful if inhaled. Causes severe respiratory tract irritation.
Skin contact	Exposure to contents of an open or damaged battery: Causes severe skin burns.
Eye contact	Exposure to contents of an open or damaged battery: Causes serious eye damage.
Ingestion	Exposure to contents of an open or damaged battery: Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Exposure to contents of an open or damaged battery: Dust may irritate the eyes and the respiratory system.

Information on toxicological effects

Acute toxicity	Exposure to contents of an open or damaged battery: Harmful if inhaled or swallowed.

Components	Species	Test Results
Electrolyte (Sulfuric acid) (CAS 7664-93-9)		
Acute		
Oral		
LD50	Rat	2140 mg/kg

Skin corrosion/irritation	Exposure to contents of an open or damaged battery: Causes severe skin burns.
Serious eye damage/eye irritation	Exposure to contents of an open or damaged battery: Causes serious eye damage.

Respiratory or skin sensitisation

Canada - Alberta OELs: Irritant		
Antimony (CAS 7440-36-0)		Irritant
Respiratory sensitisation	No data available.	
Skin sensitisation	No data available.	
Germ cell mutagenicity	No data available.	

Carcinogenicity	The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions.

ACGIH Carcinogens

Electrolyte (Sulfuric acid) (CAS 7664-93-9)	A2 Suspected human carcinogen.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	A3 Confirmed animal carcinogen with unknown relevance to humans.

Canada - Alberta OELs: Carcinogen category

Electrolyte (Sulfuric acid) (CAS 7664-93-9)	Suspected human carcinogen.

Canada - Manitoba OELs: carcinogenicity

Electrolyte (Sulfuric acid) (CAS 7664-93-9)	Suspected human carcinogen.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	Confirmed animal carcinogen with unknown relevance to humans.

Canada - Quebec OELs: Carcinogen category

Lead and lead compounds (inorganic) (CAS 7439-92-1)	Detected carcinogenic effect in animals.

IARC Monographs. Overall Evaluation of Carcinogenicity

Electrolyte (Sulfuric acid) (CAS 7664-93-9)	1 Carcinogenic to humans.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	2B Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Electrolyte (Sulfuric acid) (CAS 7664-93-9)	Known To Be Human Carcinogen.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity	None under normal conditions. Exposure to contents of an open or damaged battery: May damage fertility or the unborn child.
Specific target organ toxicity - single exposure	None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs (respiratory system).
Specific target organ toxicity - repeated exposure	None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs through prolonged or repeated exposure: Respiratory system.
Aspiration hazard	Due to the physical form of the product it is not an aspiration hazard.
Chronic effects	Exposure to contents of an open or damaged battery: Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues. Chronic inhalation of sulfuric acid mist may increase the risk of lung cancer.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Exposure to contents of an open or damaged battery: Very toxic to aquatic life with long lasting effects.

Components	Species	Test Results
Lead and lead compounds (inorganic) (CAS 7439-92-1)		
LC50	Rainbow trout, donaldson trout (Oncorhynhus mykiss)	1.17 mg/l, 96 Hours

Persistence and degradability	The degradation half-life of the product is not known. Lead and its compounds are highly persistent in water.
Bioaccumulative potential	Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but very little bioaccumulation occurs through the food chain.
Mobility in soil	If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater.
Mobility in general	The product is insoluble in water and will spread on the water surface.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Recycle the batteries, as the primary disposal method. Avoid discharge into water courses or onto the ground. Dispose of this material and its container to hazardous or special waste collection point. Neutralize electrolyte/sulfuric acid.
Local disposal regulations	Empty containers should be taken to an approved waste handling site for recycling or disposal.
Hazardous waste code	Spent lead-acid batteries are not regulated as hazardous waste when recycled. Depending upon circumstances, the following waste codes may apply: Spilled electrolyte/Sulfuric acid. D002: Corrosive waste

Waste from residues / unused products	Avoid discharge into water courses or onto the ground.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

TDG

UN number	UN2794
UN proper shipping name	BATTERIES, WET, FILLED WITH ACID, electric storage
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN2794
UN proper shipping name	Batteries, wet, filled with acid electric storage
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	-
Environmental hazards	No
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Packing Instruction: 870

IMDG

UN number	UN2794
UN proper shipping name	BATTERIES, WET, FILLED WITH ACID electric storage
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	-
Environmental hazards	
Marine pollutant	No
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Packing Instruction: P801

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

15. Regulatory information

Canadian regulations	This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)

Antimony (CAS 7440-36-0)
Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Precursor Control Regulations

Electrolyte (Sulfuric acid) (CAS 7664-93-9)	Class B

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto Protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	19-September-2017
Revision date	19-March-2018
Version No.	03
List of abbreviations	LD50: Lethal Dose 50%. LC50: Lethal Concentration 50%.
References	IARC Monographs. Overall Evaluation of Carcinogenicity Registry of Toxic Effects of Chemical Substances (RTECS)
Disclaimer	The information in this SDS was obtained from sources which we believe are reliable, but no warranty or representation as to its accuracy or completeness is hereby given. Users should consider the information herein only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal, the safety and health of employees and customers and the protection of the environment.