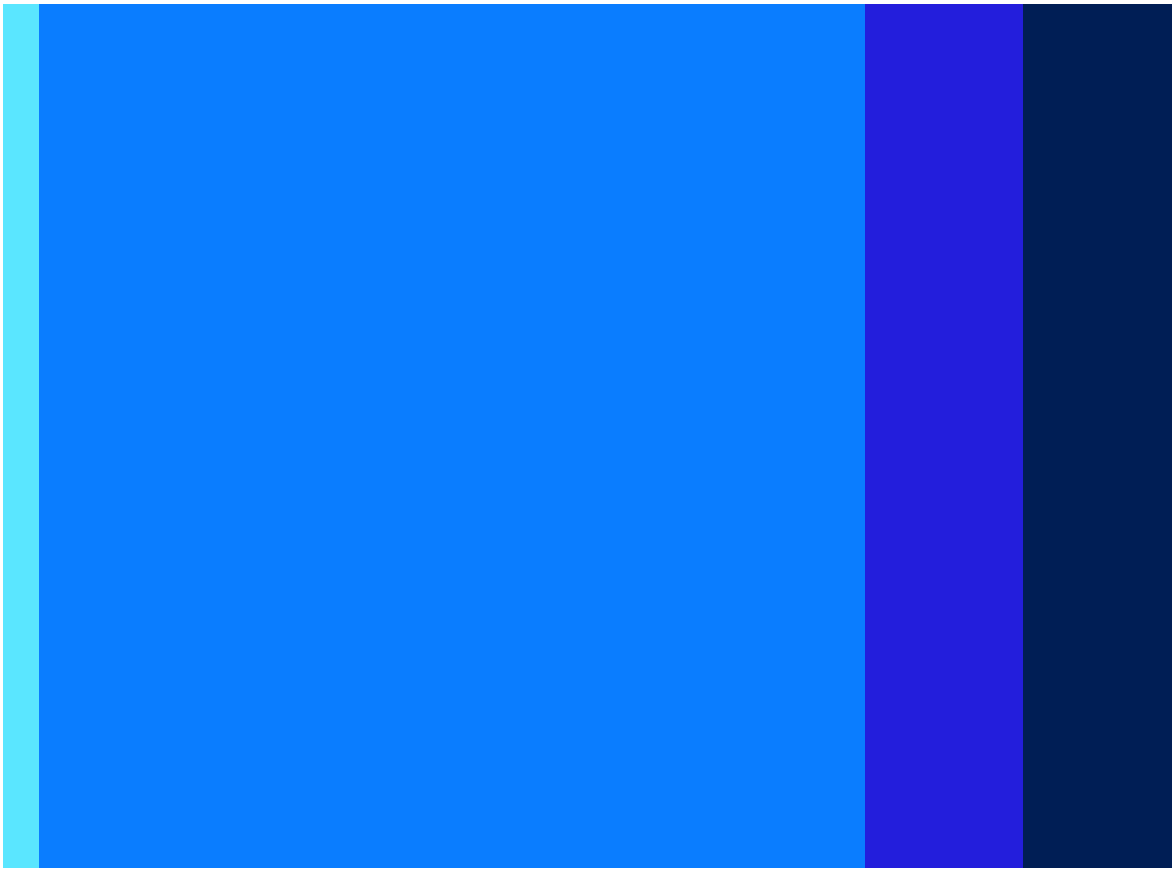
Jacobs

Spill Contingency Plan for the Northwest Territories

Version: 001

Westcoast Energy Inc.

Pointed Mountain Pipeline Abandonment Project



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Spill Contingency Plan for the Northwest Territories

Company Name: Westcoast Energy Inc.

Revision No.: 001 **Project Environment Lead:** William Kerr

Date: January 2024 **Prepared By:** Jacobs

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Document History and Status

Revision	Date	Description	Author	Checked	Reviewed	Approved
001	January 9, 2024	Spill Contingency Plan for the Northwest Territories	Jacobs	Elsa Kaus & Adam Oswell	William Kerr	January 18, 2024

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Document Control and Revision Maintenance

The Project Environment Lead (PEL) or designate is responsible for the maintenance, revision, and distribution of this Spill Contingency Plan (SCP). This SCP will be continually updated throughout the Project duration when new or updated information is available, taking into consideration environmental factors, local regulations and laws, and Project-specific changes.

Minor revisions, such as Project personnel contact details, may occasionally be required and will be considered minor version edits. Major revisions caused by Project scope changes will require a version update and resubmission to the Mackenzie Valley Land and Water Board. The PEL or designate will be responsible for SCP revision updates and changes.

Revision #	Section(s) Revised	Description of Revision	Prepared by	Issue Date
0	N/A	First Version	Enbridge	January 18, 2024

Additional copies or updated versions of the SCP can be obtained from the PEL or designate. It is the responsibility of the PEL or designate to make sure previous versions of the SCP are promptly replaced with required personnel at specified locations mentioned in this plan.

Contents

Appendices

Tables

Figures

Acronyms and Abbreviations

CM	Construction Manager
EI	Environmental Inspector
Enbridge	Enbridge Inc.
ETC	Enhanced Thermal Conduction
GNWT	Government of the Northwest Territories
kg	kilogram(s)
km	kilometre(s)
L	litre(s)
m	metre(s)
mm	millimetre(s)
NPS	Nominal Pipe Size
NWT	Northwest Territories
PCB	polychlorinated biphenyl
PEL	Project Environment Lead
PPE	personal protective equipment
Project	Pointed Mountain Pipeline Abandonment Project
SCP	Spill Contingency Plan
SDS	Safety Data Sheet
Westcoast	Westcoast Energy Inc.
WHMIS	Workplace Hazardous Materials Information System

1. Introduction and Project Details

Westcoast Energy Inc. (Westcoast), a subsidiary of Enbridge Inc. (Enbridge), applied to the Mackenzie Valley Land and Water Board (MVLWB) in November 2023 for a Type A Land Use Permit and Type A Water Licence in support of the Pointed Mountain Abandonment Project (Project) activities within the Northwest Territories (NWT). The pipeline has been deactivated for several years with no prospective future use. As such, Westcoast is planning to take the Pointed Mountain Pipeline permanently out of service by moving on to the abandonment phase. Table 1-1 presents project details occurring in the NWT.

Westcoast has prepared this Spill Contingency Plan (SCP) to provide guidance for the management of spills during typical abandonment activities in the NWT. This plan has been developed to address spills from the Project within the Project footprint and NWT. The Indigenous and Northern Affairs Canada Guidelines for Spill Contingency Planning (INAC 2007) was used as a reference for developing this document. Abandonment activities are planned to occur during winter 2024 and 2025, and there will be no further risk of spills upon Project completion.

Table 1-1. Project and Spill Contingency Plan Information

Company Name	Westcoast Energy Inc.
Mailing Address	Fifth Avenue Place 425 1st Street S.W. Calgary, Alberta T2P 3L8
Project Name	Pointed Mountain Pipeline Abandonment Project
Site Names/ Locations	The permitted land use areas for this Project within the NWT are as follows: ▪ Areas where aboveground infrastructure will be removed (PM-1, PM-2, PM-3, and PM-4) ▪ One area where an exposed section of pipe will be removed (PM-4A) ▪ Areas along the existing Pointed Mountain Pipeline right-of-way where test lead posts will be removed ▪ Access along the existing Pointed Mountain Pipeline right-of-way ▪ Access along existing Government of the Northwest Territories (GNWT) roads ▪ Paramount Road Laydown area ▪ North Work Camp Site (Options 1 and 2) Refer to Appendix A – Project Map Package for the locations of Project activities, access, and temporary workspace.
Effective Date	January 18, 2024
Last Revision	January 18, 2024
Plan Version	001
Distribution List Internal	▪ William Kerr, Project Environment Lead (PEL) ▪ Bert Fillion, Construction Manager (CM) ▪ Environmental Inspector (TBD)

Distribution List External	▪ Mackenzie Valley Land and Water Board ▪ Contractor (TBD)

1.1 Enbridge Sustainability Policy

Enbridge operates in a manner that minimizes the impacts of its business activities on climate, land, air, water, wildlife, and biodiversity, as well as historical and cultural resources. Enbridge integrates environmental considerations over the life of its assets, from design and construction to operation and maintenance, and eventually to decommissioning and abandonment.

Please refer to the Enbridge Sustainability Policy in Appendix B.

1.2 Purpose and Scope

This SCP has been prepared to expand on the spill prevention, containment and control measures outlined in the Environmental Protection Plan prepared for the Project. It includes measures to be followed to prevent spills from occurring and minimize the effects of a spill during abandonment activities within the NWT. The overall goal of the SCP is to reduce the impacts and disturbance of the Project on the environment and surrounding communities by managing and mitigating Project spills. A detailed background on the environmental aspects and considerations of the Project is within the Pointed Mountain Pipeline Abandonment Closure and Reclamation Plan (Enbridge 2023a).

1.3 Project Description

The approximately 56 kilometre (km) NPS 20 Pointed Mountain Pipeline was constructed in 1972 and deactivated in 2008 (from Mile Posts 0 to 21.71) and 2016 for the remainder. A 1.2 km segment of pipeline crossing the Kotaneelee River was removed in 2016. As part of the deactivation process, the pipeline was purged, cleaned of residual product, internally coated with corrosion inhibitor, filled with nitrogen gas to a minimum pressure of 70 kilopascals, and physically isolated from sources of upstream pressure.

Westcoast has determined that there is no prospective future use for this pipeline and will take it permanently out of service. The abandonment scope of work in the NWT includes the following:

- Removing the aboveground infrastructure at four locations (PM-1, PM-2, PM-3, and PM-4)
- Removing a section of exposed pipe at PM-4A
- Removing the test lead posts along the pipeline right-of-way, where accessible

Refer to Appendix A (Project Map Package) for the locations of abandonment activities, access, and temporary workspace. Bridge repair work along the access route will also be completed, if warranted. Some heavy equipment may be staged prior to winter via barge on the north end of the Liard River ice bridge crossing to facilitate abandonment activities.

The major watercourses crossed are the Petitot River, Liard River, and Kotaneelee River. Water will be withdrawn from each of these rivers to build ice bridges and to freeze in the access to the project sites.

Many of the Project facilities will be mobile, such as accommodations, office, laydown, and staging areas.

1.4 Site Description

Table 1-2 presents the scope of work for each worksite in the NWT. Refer to Appendix A (Project Map Package) for site characteristics and environmental features, such as watercourses, water bodies, and wetlands.

Table 1-2. Abandonment Scope of Work

Worksite	Scope of Work
PM-1	▪ Remove pig launcher and associated kicker line, flare, aboveground flare piping, aboveground producer connection piping, structural steel, and risers. ▪ Remove diesel and propane bullets and/or tanks. ▪ Conduct remediation.
PM-2	▪ Remove producer tap.
PM-3	▪ Remove nitrogen vent and valves.
PM-4	▪ Remove nitrogen vent and valves.
PM-4A	▪ Remove exposed pipeline.
Access – existing GNWT roads and trails	▪ Brush vegetation, if needed. ▪ Plow and pack snow to create a driving surface for vehicles and equipment. ▪ Ice bridge installation at the Petitot River and Liard River (IB-01 and IB-02).
Access – along existing Pointed Mountain Pipeline right-of-way	▪ Brush vegetation, if needed. ▪ Plow and pack snow to create a driving surface for vehicles and equipment. ▪ Ice bridge installation at the Kotaneelee River (IB-03).
Paramount Road Laydown area	▪ Laydown area to support abandonment activities along the right-of-way
North Work Camp Site (Options 1 and 2)	▪ Campsite and accommodation ▪ Fuel storage ▪ Waste storage

1.5 Project Hazardous Materials

Hazardous material storage is typically limited to campsites and laydown locations. Any storage of hazardous materials on other land use areas is limited to the contents of equipment moving or working in these areas. Except for the contaminated soils that will be treated onsite at PM-1, any contaminated waste will be transported out of the NWT for proper treatment or disposal. Please refer to the project-specific waste management plan for details (Westcoast 2024). Table 1-3 lists the various types of hazardous materials, volumes, and locations that are anticipated to be temporarily stored for this Project.

Table 1-3. Onsite Hazardous Materials and Details

Material	Storage Container (litres)	Storage Location	Material Use
Diesel	35,000	Double-walled, skid-mounted tank inside secondary containment at the camp	Fuel for vehicles and equipment
Gasoline	10,000	Double-walled, skid-mounted tank inside secondary containment at the camp	Fuel for vehicles and equipment
Diesel	2 x 450	Tidy Tanks in pick-up trucks	Refuel of Project vehicles
Propane	2 x 3,785	Bullets at camp	Camp accommodation and facility use
Propane	4 x 1,893	Bullets at camp or laydown area	Portable unit fill stations for camp/accommodation, facility, and site use
Propane	2 x 378	Tanks at camp	Additional heating for camp/accommodation and facility use
Propane	1 x 35,000	Bullet on a trailer at PM-1 site	Iron Creek Treatment System (Enhanced Thermal Conduction)

1.6 Project Preventive Measures

The Project has developed site-specific preventive and mitigation measures related to spills, fuel storage, and handling of the materials listed in Table 1-3.

1.6.1 Fuel Storage – General

The Contractor and all those handling fuel onsite, will follow proper fuel storage practices, including, but not limited to the following:

- Bulk fuel storage will be at the camp location. Fuel bullets, tanks, containers, and stationary equipment will not be stored within the normal high-water mark of a watercourse or wetland.
- Install signage at fuel storage areas to include “Fuel Storage Area – No smoking within 15 m.”
- Store fuels, lubricants, waste oil, and any other regulated substances in aboveground tanks only.
- Storage tanks and containers will conform to all applicable industry codes.
- Use a secondary containment structure at each fuel storage site providing a minimum containment volume equal to 150% of the volume of the largest storage vessel. This includes any stationary or portable equipment that contains fuel (i.e., portable pumps, generators).
- Appropriate spill kits will be kept readily available at fuel or hazardous materials storage locations, as well as refuelling and maintenance sites. Spill kits will be readily available at all site locations to stop flow in the event of a leak. Please refer to section 4.1.1 for details.
- Secondary containment areas will not have drains. If spillage occurred in the structure, the Contractor will collect and dispose or recycle recovered materials at an approved facility.

- If fuel tank is double-walled, tertiary containment will be provided.
- Daily inspections of all fuel storage bullets, tanks, and containers will occur to ensure compliance with this SCP.

1.6.2 Refuelling, Maintenance, and Fuel Storage near Wetlands and Waterbodies

Westcoast requires that the storage of petroleum products, refuelling, maintenance, and lubricating operations take place in upland areas that are more than 30 metres (m) from wetlands, streams, and waterbodies (including drainage ditches) and provide secondary containment, unless otherwise indicated in regulatory authorizations.

In certain instances, refuelling, or fuel storage may be unavoidable because of site-specific conditions or unique construction requirements (e.g., continuously operating pumps or equipment on barges). An Environmental Inspector (EI), or the PEL, must approve these locations and fuelling plans in advance.

Site-specific precautions, in addition to the practices described earlier, will be implemented when refuelling or maintenance activities are required within 30 m of streams, wetlands, or other waterbodies. These precautions include, but are not limited to the following:

- The Contractor will make all efforts to dispense fuel only during daylight hours.
- All containers, hoses, and nozzles are to be free of leaks.
- All fuel nozzles are equipped with automatic shutoffs.
- Operators are stationed at both ends of the hose during refuelling unless the ends are visible and readily accessible by one operator.
- Fuel remaining in the hose is returned to the storage container.
- The EI has been consulted before equipment being fuelled or serviced within the ordinary high-water mark / level of a waterbody to confirm appropriate mitigation has been used.
- Keeping adequate amounts of absorbent materials and containment booms on hand to enable the rapid cleanup of any spill that may occur.
- Using secondary containment for fuel storage and refuelling of continuously operating pumps.
- Providing adequate lighting for these locations and activities.
- Overnight parking

Equipment parked overnight at the work site must be equipped with adequate secondary containment beneath areas prone to leakage of fuel and oils (e.g., drip tray beneath excavator). Westcoast will not allow overnight parking of equipment (e.g., light plants, generators, pumps, and machinery) within 30 m of a wetland or waterbody unless the Contractor implements adequate containment and has prior approval from the EI or PEL.

1.6.3 Spill Contingency Plan Locations

Copies of this plan will be available at the Project site office, camp location, and onsite with the EI during all abandonment activities in the NWT.

1.6.4 Media Procedures

If any Project personnel are contacted by the media, all inquiries will be directed to:

Enbridge Media Hotline: 1-888-992-0997

In addition, Project personnel will immediately inform their Site or Project supervisor about the inquiry as soon as possible.

2. Response Organization and Processes

This section identifies the organization and response personnel for the Project, as well as their Project responsibilities and duties.

2.1 Project Roles and Responsibilities

This section provides standard guidelines for roles and responsibilities for environmental compliance during Project activities.

Westcoast will provide oversight to monitor compliance with this SCP. Where required, the EI will assist the Contractor in interpreting and implementing the requirements of the SCP and verify compliance with these procedures on behalf of Westcoast.

Environmental compliance, related to spill response, is a critical component of Project success. Westcoast expects full compliance by all Project personnel. During construction, environmental compliance is the responsibility of every person on the Project team. All onsite personnel can be classified as a potential first responder, as defined further in this section.

Figure 2-1. Project Team Organization

First Responder

Any onsite personnel who discovers a spill and is the first person to respond to the spill event will complete the following:

- Immediately report all spills to the Spill Coordinator, Westcoast inspection personnel, and the EI.

Spill Coordinator

The Contractor will designate a Spill Coordinator, subject to Westcoast approval. For all Project-related spills, the Spill Coordinator will complete the following:

- Immediately report all spills to Westcoast inspection personnel and the EI.
- Mobilize onsite personnel, equipment, and materials for containment or cleanup of the spill.

- Assist emergency response and monitor containment procedures to confirm that the actions are consistent with the requirements of this section.
- In consultation with Westcoast and appropriate regulatory authorities, determine if it is necessary to evacuate the spill site to safeguard human health.
- Document the incident using the Spill Report Form (Appendix C) or an equivalent form containing the same information.

Site Supervisor

The Contractor will designate a Site Supervisor (may also be designated as the Spill Coordinator), subject to Westcoast approval. For all Project-related tasks and activities, the Site Supervisor will complete the following:

- Supervise all aspects of the abandonment activities for the Project and work with Project personnel to ensure spill response procedures and mitigations are followed.
- Report to the Contractor manager, Westcoast CM, and PEL.
- Assist with the mobilization of onsite personnel, equipment, and materials for containment or cleanup of the spill.
- Assist emergency response and monitor containment procedures to confirm that the actions are consistent with the requirements of this SCP.
- Assist the Spill Coordinator to document the incident using the Spill Report Form (Appendix C) or an equivalent form containing the same information.

Environmental Inspector

The EI reports directly to the CM and the PEL. The EI will work with the CM and Contractor to confirm all Project personnel are aware of the environmental conditions, commitments, and guidelines for the Project and that the Project is executed in compliance with this SCP. The EI is recognized as an integral part of the construction management team and their role is to be well-defined within the chain of command at Project sites.

EI responsibilities include the following:

- Work with the CM and the Contractor to confirm abandonment activities are compliant and aligned with all plans, permit conditions, and this SCP.
- In coordination with the CM and the Contractor, review the planned activities to verify execution will not lead to adverse environmental impacts.
- Confirm that mitigation measures are implemented to provide effective protection of the environment in the Project area. Where environmental mitigation measures or construction activities need to be improved or amended to avoid adverse impacts to the environment, this will be done in coordination with the CM.
- Attend field Project meetings to understand Project status, developments, and requirements and to verify that environmental risks of the Project are adequately identified.
- Work to identify solutions to potential environmental concerns and identify corrective actions to address any noncompliance activities.

- Identify if permit variances or new mitigation strategies are required based on proposed changes to construction plans in the field and assisting in the development of strategies with the Project Manager (PM), CM, and PEL.
- Conduct regular inspection activities and bring any deficiencies or other issues to the attention of the CM.
- The EI, in consultation with the PEL, will have the authority to intervene (including suspension of work), if an activity or site condition could cause or is causing adverse effects to the environment.
- Write daily inspection reports and issue to Westcoast. Reports will contain an update of onsite activities and conditions, issues that need to be addressed, follow-up on previously identified action items, relevant discussions with onsite or offsite personnel, decisions made, etc.
- Support the Project with onsite activities as needed, such as training, site visits, spill, and incident reporting.

Project Environment Lead

The PEL communicates directly with the PM and CM and has primary functional responsibility for environmental issues and activities. The PEL's responsibilities include the following:

- Identify and document environmental requirements and risks for the Project; confirm they are communicated to the Project team.
- Provide Project-level training, as necessary, to appropriate Project personnel.
- Function as the primary point of contact and manage communications with federal, provincial, territorial, or local environmental regulators.
- Obtain environment approvals required to execute the Project.
- Confirm all pre-construction environmental notifications are completed, in accordance with the requirements of the appropriate regulatory authorities.
- Provide and manage environmental inspection resources.
- Verify consistent interpretation and application of environmental requirements.
- Establish a reporting system and report on Project environmental compliance or potential compliance issues to the project management team.
- Work with the PM to resolve challenging or disputed environmental issues and to develop acceptable solutions.
- Support the proper documentation and investigation, as required, of environmental incidents.
- Conduct environmental health checks or provide support to internal reviews as required, and oversee the implementation of any corrective action plans.

Construction Contractor (Contractor)

The Construction Contractor is responsible for the following:

- Verify that the SCP requirements are executed during all phases of abandonment.
- Understand environmental risks and requirements.
- Identify and take appropriate action to resolve environmental problems or non-compliances during all Project activities.

- Contact the EI to report environmental incidents and obtain guidance on environmental elements related to Project activities that may be unclear.
- Have the resources available (personnel and materials) to confirm environmental requirements are executed appropriately.
- Implement environmental corrective actions as identified by the EI and Project team.

Construction Manager

The Construction Manager is responsible for the following:

- Planning and execution of the overall project, including environmental compliance.
- Communicate with the EI and PEL to jointly resolve decisions with environmental implications.
- Oversee all major spill response actions, mitigations, and cleanup.
- Confirm the Contractor has resources to meet environmental requirements (including upset conditions) and implement corrective actions related to potential or actual non-compliances.
- Provide construction expertise and advice to the PEL/EI as required.

2.2 Project Response Personnel

All onsite Project personnel will be trained and familiar with this SCP and responsible to become a first responder. Key personnel are identified in Table 2-1.

Table 2-1. Key Project and Spill Response Personnel

Contact Name	Role/Position	Contact Information
All onsite personnel	First Responder	N/A
TBD	Spill Coordinator	TBD
TBD	Site Supervisor	TBD
TBD	EI	TBD
William Kerr	PEL	403-776-8311
Bert Fillion	CM	780-508-7507

3. Spill Response Action Plan

This section outlines the spill potentials and environmental impacts, as well as the procedures that must be taken in response to a spill. The following steps must be followed in accordance with the Indigenous and Northern Affairs Canada Guidelines for Spill Contingency Planning (INAC 2007):

- Initial Response and Actions
- Spill Reporting
- Containment and Cleanup Procedures
- Transferring, Storing, and Managing Spills
- Restoring Affected Areas

Potential spill size and sources have been considered using a worst probable case scenario for the Project.

3.1 Potential Spill Size and Source Details

Table 3-1 provides details on potential spill sources and worst-case scenario spill sizes.

Table 3-1. Project-specific Spill and Source Details

Material (sources)	Potential Discharge Event	Discharge Volume (worst case) (litres)	Worst Case Risk Potential
Gasoline (all-terrain vehicles, vehicles) ▪ Double-walled, skid-mounted tank inside secondary containment at the camp	1. Overfilling of vehicles and all-terrain vehicles 2. Leaking drums or containers 3. Leaking vehicles or equipment 4. Breach or release of fuel storage tank	10,000	Minor
Gasoline	1. Overfilling of tidy tanks in pick-up trucks. 2. Accidental drip while transporting. 3. Vehicle accident and/or roll over.	2 x 450	Minor
Diesel (heavy machinery) ▪ Double-walled, skid-mounted tank inside secondary containment at the camp	1. Overfilling of heavy machinery. 2. Overfilling of tidy tanks in pick-up trucks. 3. Leaking drums of containers 4. Accidental drip while transporting 5. Breach or release of fuel storage bullet	Between 15,000 and 35,000	Minor
Propane ▪ Bullets at camp	1. Leaking container 2. Accidental discharge or release 3. Release during refilling 4. Breach or release of fuel storage bullet	3,785	Minor

Material (sources)	Potential Discharge Event	Discharge Volume (worst case) (litres)	Worst Case Risk Potential
Propane ▪ Bullets s at camp or laydown area	1. Leaking container and accidental discharge or release	1,893	Minor
Propane ▪ Tanks at camp	1. Leaking container and accidental discharge or release	378	Minor
Propane ▪ Bullet on a trailer at PM-1 site	1. Leaking container and accidental discharge or release 2. Release during refilling	30,000	Moderate

3.2 Potential Environmental Impacts of Spill

The overall impact of hazardous material spills is comparatively reduced during winter conditions. This is attributed to the inherent properties of snow acting as a natural sorbent and the formation of ice, which serves as a barrier, effectively limiting or even eliminating the potential for soil or water contamination. Consequently, the management and recovery of spills become more feasible, as they can be promptly identified, reported, and controlled in winter conditions.

Table 3-2 presents some hypothetical scenarios of hazardous material releases that could have a minor, moderate, or major impact to the environment. Based on past Westcoast projects conducted in rugged terrain under winter conditions, the most common event is minor and easily addressed by the crew at hand. However, it is still important to be prepared to respond to moderate or major events.

Safety Data Sheets (SDS) of hazardous materials that may be utilized for this Project are provided in Appendix D and Project-specific spill and source details are described in Table 3-2.

Table 3-2. Project-specific Spill and Source Details

Severity	Hypothetical Event	Typical Volume (litres)	Potential Environmental Impacts
Minor	▪ Overfilling of vehicles or equipment ▪ Ruptured hydraulic line	Less than 20	▪ Stained snow, ice, or frozen soil ▪ Toxic fumes release
Moderate	▪ Vehicle rollover ▪ Release into watercourse	Between 20 and 200	▪ Soil, vegetation, or water contamination
Major	▪ Loss of fuel storage containment	Greater than 200	▪ Soil, vegetation, or water contamination ▪ Disruption to transportation ▪ Public evacuation

3.3 Project Spill Response Procedures

In the event of a spill, a structured and comprehensive response is crucial to safeguard the health and safety of individuals and protect the environment. The procedures outlined in this section provide a systematic approach to the initial response and actions following the discovery of a spill. As spills vary in magnitude, response measures will also need to vary to address the size and severity of the incident. This plan emphasizes the significance of coordination, preparedness, and adherence to safety protocols to mitigate the potential impacts of spills.

3.3.1 Initial Response and Actions

3.3.1.1 Discovery of Spill

Any person finding a spill has the responsibility to ensure the health and safety of themselves and that of the people in the vicinity of the spilled material. If required, evacuate people to the appointed muster point and alert the onsite Coordinator/Supervisor.

3.3.1.2 Procedure for Initial Action (First Responder)

The First Responder is typically the person who discovers a spill and is the first person to respond. The primary responsibility of the First Responder is to ensure their own safety and that of other people in the immediate area. No attempt to clean up the spill will be undertaken unless it is safe to do so. The First Responder will contact the designated Spill Coordinator who will then take on the lead of Incident Commander. The following section illustrates the proper steps in a response.

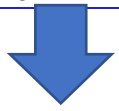
3.3.2 Spill Reporting Procedures

Any First Responder will follow the procedures in Table 3-3 in response to a spill event.

Table 3-3. Spill Response and Reporting Procedure Flow Chart

Stop Work and Secure the Scene
▪ Stop work and shut off equipment and any other sources of ignition. ▪ Notify people in the area and have them relocate to a safe area (e.g., muster point). ▪ Identify and stop the source of the release, if safe to do so. ▪ Locate a spill response kit and contain the spilled material to prevent it flowing offsite or impacting sensitive resources.

Assess and Alert
▪ Assess for hazards and ensure that everyone is safe. ▪ Call for medical assistance, if needed. ▪ Notify the Spill Response Coordinator, Site Supervisor, EI, and PEL. ▪ Photograph the scene and take notes or start filling in a Spill Report Form.



Response and Cleanup

- Refer to the SDS for the spilled substance and wear appropriate personal protective equipment (PPE).
- Enlist help and assemble the necessary equipment/materials to recover the spilled substance and any impacted material (e.g., stained soil).
- Collect recovered materials into appropriate containers (e.g., drums, garbage bags, lined area) and store in a secure temporary location.
- Arrange for the proper transport and treatment or disposal of recovered materials.

Document and Report

- Photograph the area after the cleanup has been completed.
- Finish filling in the Spill Report Form and include before-and-after photographs.
- Forward the completed report to the Spill Coordinator the same day.

3.3.2.1 Relevant Information to Collect About a Spill

The First Responder will often be responsible for collecting information about a release for reporting purposes, including the following information:

- Location
- Date/time
- Material/substance released
- Source of the release
- Approximate size of the spill area
- Approximate amount released
- Weather conditions at the time of the spill
- Any site features that may affect cleanup efforts
- Any sensitive areas that may be impacted (e.g., water, vegetation)
- Any impacts to wildlife

The NT-NU Spill Report Form (Appendix C) or equivalent should be used to collect information about the spill and forwarded to the Spill Coordinator, EI, PEL and PM.

3.3.2.2 Identification of Spilled Material and Containment

Identification of the spilled material is crucial to assessing the hazards and some of the relevant cleanup techniques. The First Responder should reference the applicable SDS (Appendix D) for information about potential hazards, personal protective equipment (PPE), and safe handling requirements of any spilled material, before containing and cleaning the spill. If it is safe to do so, investigate the source of the spilled material and stop additional material from being released.

Ensure the material is contained as best as possible using emergency response supplies and techniques detailed in this SCP.

3.3.2.3 Notification Procedures

Notification of an incident follows a chain to ensure the proper people and authorities are contacted.

Typically, any person that encounters a spill will notify the onsite Spill Coordinator. The Spill Coordinator will then take on the lead as Incident Commander and will be responsible for contacting medical aid and the EI or PEL, if not already notified.

The Spill Coordinator will also contact additional spill response resources (Section 4.2), if required, which may include the NT-NU Spill Line, local communities, and regulating bodies.

NT-NU 24-HOUR SPILL REPORT LINE AND REGULATOR REPORTING 867-920-8130

All spills regardless of size or volume(i.e., including spot spills) must be documented and reported to the EI, Spill Coordinator, PEL, and CM on the day they occur.

Releases that meet or exceed any threshold listed in Table 3-4 must be reported immediately to the NWT 24-hour Spill Line. Table 3-4 details the Immediate Reportable Spill Quantities that will be followed by the Project.

Table 3-4. Immediate Reportable Spill Quantities

Description	Minimum Quantities
Explosives (TDG Class 1)	Any amount
Compressed gas (Toxic – TDG Class 2.3)	Any amount
Compressed gas (Corrosive – TDG Class 2.4)	Any amount
Compressed gas (noncorrosive, non-flammable, TDG Class 2.2)	Any amount of gas from containers with a capacity greater than 100 L
Flammable liquids (TDG Class 3.1, 3.2, 3.3)	Of any kind: ≥ 100 L
Flammable solid (TDG Class 4.1)	≥ 25 kg
Substances liable to spontaneous combustion (TDG Class 4.2)	≥ 25 kg
Oxidizing substances (TDG Class 5.1)	≥ 50 kg or 50 L
Oxidizing miscellaneous products or substances excluding PCB mixtures (TDG Class 9.1)	≥ 50 kg or 50 L
Organic peroxides (environmentally hazardous; TDG Class 5.2)	≥ 1 kg or 1 L
Poisonous, corrosive substances, or dangerous wastes (TDG Class 6.1, 8, 9.3)	≥ 5 kg or 5 L
PCB mixtures of 5 or more ppm (parts per million)	≥ 0.5 L or 0.5 kg
Other Contaminates (crude oil, drilling fluid, produced water, used or waste, vehicle fluids, wastewater)	≥ 100 L or 100 kg

Description	Minimum Quantities
Flammable liquid vehicle fluid	≥ 20 L When released on a frozen water body that is being used as a working surface
Sour natural gas (i.e., contains H2S) and sweet natural gas	Uncontrolled release or sustained flow of 10 minutes or more
Sewage and wastewater (unless otherwise authorized)	Any amount

Notes:

kg = kilogram(s)
L = litre(s)
PCB = polychlorinated biphenyl
TDG = Transportation of Dangerous Good

All releases of harmful substances, regardless of quantity, are to be reported to the NWT spill line (867-920-8130) if the release is any of the following:

- Near or into a water body
- Near or into a designated sensitive environment or sensitive wildlife habitat
- Poses imminent threat to human health or safety
- Poses imminent threat to a listed species at risk or its critical habitat
- Is uncontrollable

3.3.3 Containment and Cleanup Procedures

3.3.3.1 Location of Spill Response Equipment

Spill kits will be readily available at bulk fuel storage locations, and wherever refuelling or maintenance activities are performed.

Project vehicles and heavy equipment will also be equipped with appropriate spill response supplies (e.g., sorbent pads).

Contract fuel, service, and crew vehicles, except for services such as water supply trucks, will be equipped with similar spill response supplies.

Additional Enbridge emergency response equipment is stationed in Fort Simpson, NWT.

Enbridge also has access to additional emergency response equipment and resources in the region, if required.

3.3.3.2 Containment and Recovery Strategies

In the event of a spill, the Contractor will act promptly to contain and recover the spilled material, while abiding by all applicable federal, provincial, territorial, and local regulations. Specific containment and response strategies for releases of both hazardous and nonhazardous materials in both upland and wetland/waterbody areas are described in the following subsections.

3.3.3.3 Containment of Spills During Winter Conditions

Since abandonment activities will occur during winter months, the following containment procedures have been developed for the Project assuming response will primarily occur under winter conditions. Small amounts of spills to snow or ice will be stored and treated at the Iron Creek Enhanced Thermal Conduction (ETC) system. Any large spills to snow or ice will be disposed of outside of the NWT.

3.3.3.4 Containment of Spills on Upland Areas

Following the initial response to a spill, the following containment procedures should be carried out:

- Avoid using water or fire extinguishing chemicals unless necessary for safety, as chemicals may react violently with water, and chemical extinguishing agents may release toxic fumes. In addition, chemicals may be soluble in water and dispersal can makes containment and cleanup more difficult.
- Prohibit traffic on impacted areas, except where required for containment and cleanup.
- Use natural depressions or berms constructed with materials and equipment in proximity to the site to physically contain a spill on land.
- For large accumulations of spilled material, contain and pump directly into tank trucks.
- Place absorbent material(s) over spills to minimize spreading and to reduce its penetration into the soil.
- Refer to section 3.3.4 for contaminated soil treatment.

3.3.3.5 Containment of Spills on Wetlands and Waterbodies

In addition to the previously described measures, the following conditions apply if a spill occurs near or into a wetland or waterbody, regardless of size since these are considered sensitive areas:

- The Contractor will use absorbent booms, skimmers, sorbents, or other materials and equipment to contain and recover released materials in open water.
- Implement any additional cleanup measures resulting from consultation with the appropriate regulatory authority and Westcoast representatives.

3.3.4 Transferring, Storing, and Managing Spill-related Wastes

3.3.4.1 Storage – General

Storage of recovered materials may vary depending on the scenario. The following sections provide an overview of the waste handling requirements.

Waste containment areas must be kept at least 100 m from all waterbodies or wetlands, where feasible. Store contaminated materials and apparently clean soil/peat separately. Do not mix contaminated materials with clean materials.

Refer to the Project-specific Waste Management Plan (Westcoast 2024) for further details.

3.3.4.1.1 Contaminated Soil Handling and Storage

As described in the Project Environmental Protection Plan (Westcoast 2023b), if previously unidentified contaminated soils are encountered, the following measures should be implemented:

- The Contractor will treat (Iron Creek ETC) or dispose of the spilled material, spent absorbent materials, and contaminated soil at an approved facility (outside of the NWT) in accordance with EI guidance, and all applicable federal, provincial, territorial, and local agency requirements.
- Separate any soil suspected of contamination from productive topsoil and subsoil. Maintain separate storage piles of each soil.
- Store soils suspected of contamination within a bermed and lined containment cell. Liners must be high-density polyethylene sheeting or equivalent.
- Locate contaminated soil storage piles a minimum of 100 m from any permanent waterbody and in an area that does not have an excessive slope or risk of flooding or as approved by Westcoast. Label or install signs to readily identify the various stockpiles.
- Backfill with soil similar to that removed. If it is necessary to import soil, laboratory analyses for contaminants may first be required. Consult with the PEL for the appropriate procedures.
- For additional details, refer to the Project Environmental Protection Plan.

3.3.4.2 Small Spills

For small volumes of recovered material, such as soil or used absorbents, plastic bags or drums should be used for containment. Drums need to be closed after each use and labelled in accordance with Health Canada's Workplace Hazardous Materials Information System (WHMIS). Drums should be stored for a short time only and disposed of or removed from site in a timely manner. Any recovered liquids should be stored in leak-proof containers, labelled, and stored according to WHMIS.

3.3.4.3 Large Releases

For larger containment, use portable storage tanks or construct temporary storage cells on site. Various containment techniques may be used for temporary storage (e.g., temporary dikes around product releases on land or ice). Temporary storage sites should be constructed on the right-of-way, away from watercourses or slopes. Ideally, temporary storage areas should be located in a designated storage area with proper containment structure, such as a bermed liner.

When a land site is used for storage, construct a berm using sorbent socks or material excavated from the site around the perimeter of the storage area to prevent surface run-off and contamination of the surrounding area. Spread plastic liners over the berm and across the floor of the storage site to contain possible leachate. If the containment area is constructed, ensure the topsoil materials (or organic layer) beneath the cell is salvaged and stored for reclamation activities.

Liner material can vary, although, the following guide can be used when selecting a liner:

- Use light-duty liner (i.e., 20 mm polyethylene) for one-time short-term temporary storage (i.e., 5 days).
- Use heavy-duty liner (i.e., 60 mm or greater high-density polyethylene) for medium-term storage (i.e., less than 3 months) or where soils are actively stored and removed from the storage cell.

Place all contaminated soil or peat material within a secure containment area to ensure the contaminants are not spread through erosion or leachate. Containment area capacity must allow for containment of stormwater because of precipitation.

3.3.4.4 Treatment and Disposal

The Iron Creek ETC system will be used to treat contaminated soils (including small amounts of snow and ice). ETC is a stationary technology that uses heat to volatilize soil contaminants of concern. The heat is generated via multi-fuel burners and distributed to the soil via three steel manifolds layered within the stockpiles. The contaminated soil will be excavated and placed in 400 cubic metre (m^3) stockpiles atop three stacked manifolds running the length of each pile. The manifolds each distribute heated air through a third of the stockpile via a series of steel pipes traversing its width. Prior to activating the burners, the stockpiled soil will be encased in a stainless-steel Quonset to entrap air containing volatile organic compounds (VOCs) during the soil treatment process. Injected air will be transferred to the soil to heat it to a temperature between 260 to 425 degrees Celsius (contaminant- and concentration-dependent) to volatilize the contaminant mass. The vapours generated from the treatment process, entrapped in the headspace of the Quonset, will be treated via thermal oxidizer to destroy the VOCs prior to release of the air to the atmosphere (Iron Creek 2022).

Please also refer to the Project-specific Waste Management Plan (Westcoast 2024) for further details and background on the ETC system.

3.3.4.5 Personal Protective Equipment

Proper PPE is always required for the safe handling of contaminated material. Please refer to the Project-specific Waste Management Plan (Westcoast 2024) and the SDS (Appendix D) for guidance related to PPE.

3.3.5 Restoring Affected Areas

Most small spills will occur on land that will have or will be disturbed by Project activities, so natural regeneration of the release area will likely be the preferred method for restoration following cleanup, as it allows the native vegetation to re-establish, and reduces further disruption to the land.

For a larger spill, or a spill that impacts a sensitive area, site-specific restorative plans may need to be developed in consultation with the GNWT Department of Lands. Restoration activities may include recontouring the land, spreading salvaged topsoil, natural regeneration, and planting of species commonly found in the surrounding landscape. Please refer to delineated areas within Appendix A (Project Map Package) for the locations of sensitive areas (e.g., wetlands, watercourses).

4. Resource and Material Inventory

To fortify the emergency response capabilities and streamline spill response efforts, the following resource inventory has been established for the Project. This inventory encompasses both onsite and external resources that are available in response to spills. Onsite resources include spill kits, sorbent materials, and earth-moving equipment. External resources are contact numbers for additional internal, government, and third-party support that would likely only need to be used in the event of a large release. This resource inventory serves as a vital component in enhancing preparedness and ensuring a prompt, coordinated response to all potential spills from this Project.

4.1 Onsite Resources

Appropriate spill kits will be readily available at worksites and situated on mobile equipment, including heavy machinery and pick-up trucks. The following sections identify typical spill response resources that will be available during the Project.

4.1.1 Contents of Spill Kits

Spill kits will be updated based on current Project requirements and site conditions. Typical spill kits situated at work locations may contain the following:

- Chemical-resistant gloves
- Large disposal bags with ties
- Absorbent materials (paper towel, spill pads, absorbent cushions)
- Sorbent socks for both hydrocarbons (white) and multipurpose (gray)
- Sorbent pads for both hydrocarbons (white) and multipurpose (gray)
- Large tarps
- Sealant/plug material
- Caution tape
- Roll of duct tape and utility knife
- Plugs of various sizes
- Tank patches
- Hammer and screwdriver(s)
- Assorted sizes of metal screws with rubber washers
- Plastic tape
- Copy of this SCP

4.1.2 Other Equipment

Onsite equipment will be updated based on conditions and Project tasks at each site:

- Small loader
- All-terrain vehicles
- Chainsaws
- Fuel transfer pumps and hoses
- General-use toolkit including hack saw, hammer, screwdrivers, and other daily use tools

4.2 External Resources

The external resources listed in Table 4-1 will be available and required as part of this plan.

Table 4-1. Immediate Reportable Spill Quantities

Resource	Contact
Enbridge Emergency, 24-hour emergency line	1-888-813-6844
Alternative Enbridge Contact	780-420-8899
Northern Rockies Fire Rescue	250-774-3955
Northwest Territories-Nunavut 24-hour Spill Report Line	867-920-8130
RCMP - Fort Liard	867-770-1111
INAC Inspector	867-669-2761
Environment Canada (Emergency) Yellowknife	867-669-4725
GNWT Environmental Protection Division	867-873-7654
GNWT Environmental Health Office	867-669-8979
Medivac (Yellowknife)	867-669-4115
Great Slave Helicopters (Yellowknife)	867-873-2081

5. Training and Onboarding Program

All Project personnel receive environmental and Project training as part of the site-specific orientation before commencing any work onsite.

Awareness of this SCP will be included in the orientation for all Project workers in the NWT. Records will be retained of the training completion.

5.1 Emergency Response Training

The Contractor is required to ensure that all personnel handling fuels and other regulated substances have received proper training, including the effective containment and cleanup of any spills that may occur.

5.2 Hazardous Waste Training

All personnel working with hazardous (or potentially hazardous) materials will be required to complete appropriate training, including WHMIS training.

6. References

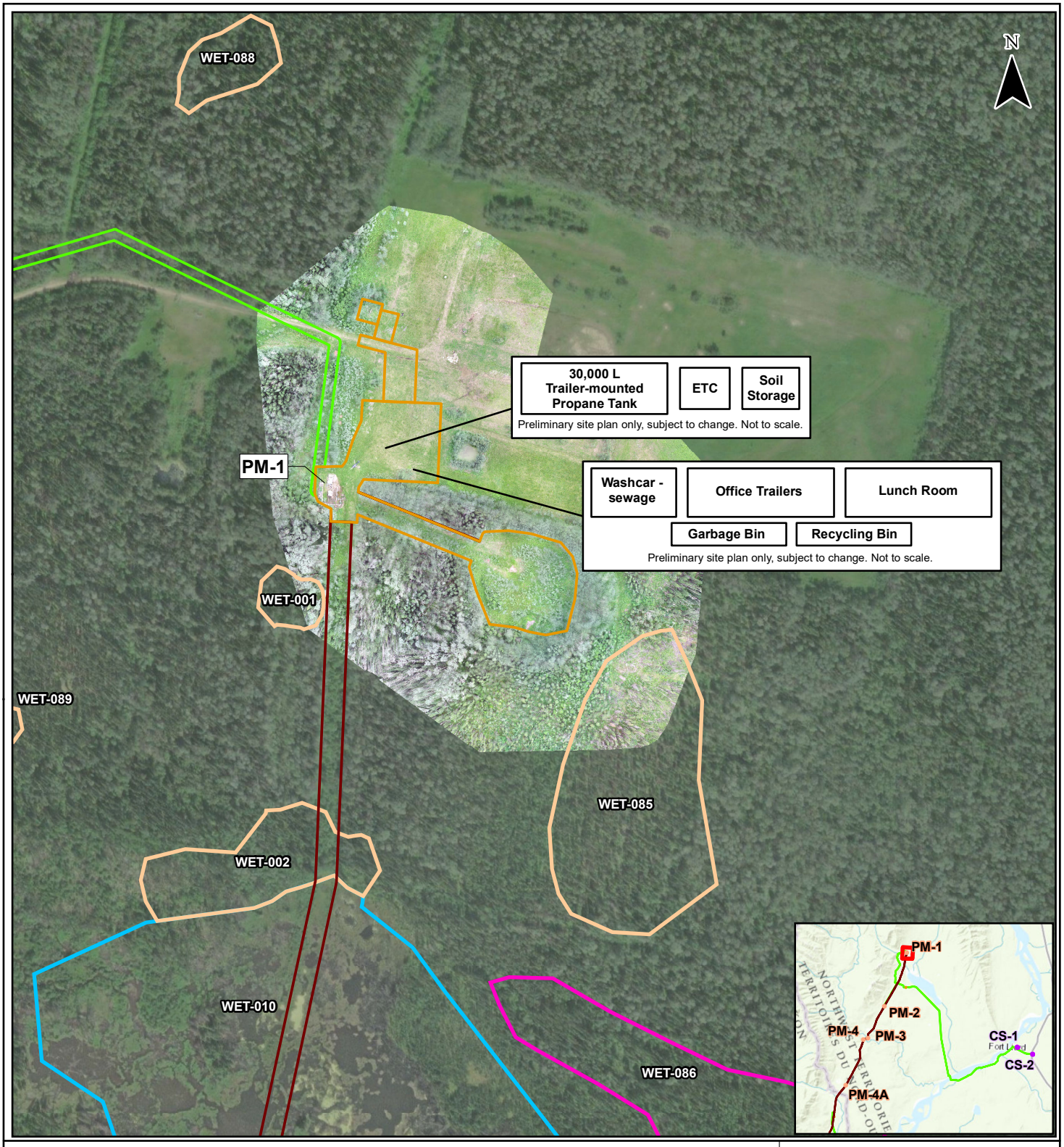
Indigenous and Northern Affairs Canada (INAC). 2007. Guidelines for Spill Contingency Planning. https://www.publications.gc.ca/collections/collection_2014/aadnc-aandc/R74-6-2007-eng.pdf.

Westcoast 2023a. Pointed Mountain Pipeline Abandonment Closure and Reclamation Plan. September. https://registry.mvlwb.ca/Documents/MV2023P0036/Westcoast%20-%20New%20Applications%20-%20Attachment%205%20-%20Closure%20and%20Reclamation%20Plan%20-%20Nov17_23.pdf.

Westcoast Energy Inc. (Westcoast). 2023b. Environmental Protection Plan. Prepared by Jacobs for the Pointed Mountain Pipeline Abandonment Project.

Westcoast. 2024. *Waste Management Plan for the Northwest Territories*. Prepared by Jacobs for the Pointed Mountain Pipeline Abandonment Project.

Appendix A
Project Map Package



Right-of-Way
Temporary Workspace
Access Road

Wetland
Fen
Shallow Water
Swamp

FIGURE 1-1

PM-1 WORKSITE

WESTCOAST ENERGY INC.
POINTED MOUNTAIN PIPELINE
ABANDONMENT PROJECT

NAD 1983 UTM Zone 10N
Satellite Imagery: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community.

SCALE: 1:5,000
0 75 150
m
(All Locations Approximate)

Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.

January 2024 | CE862600

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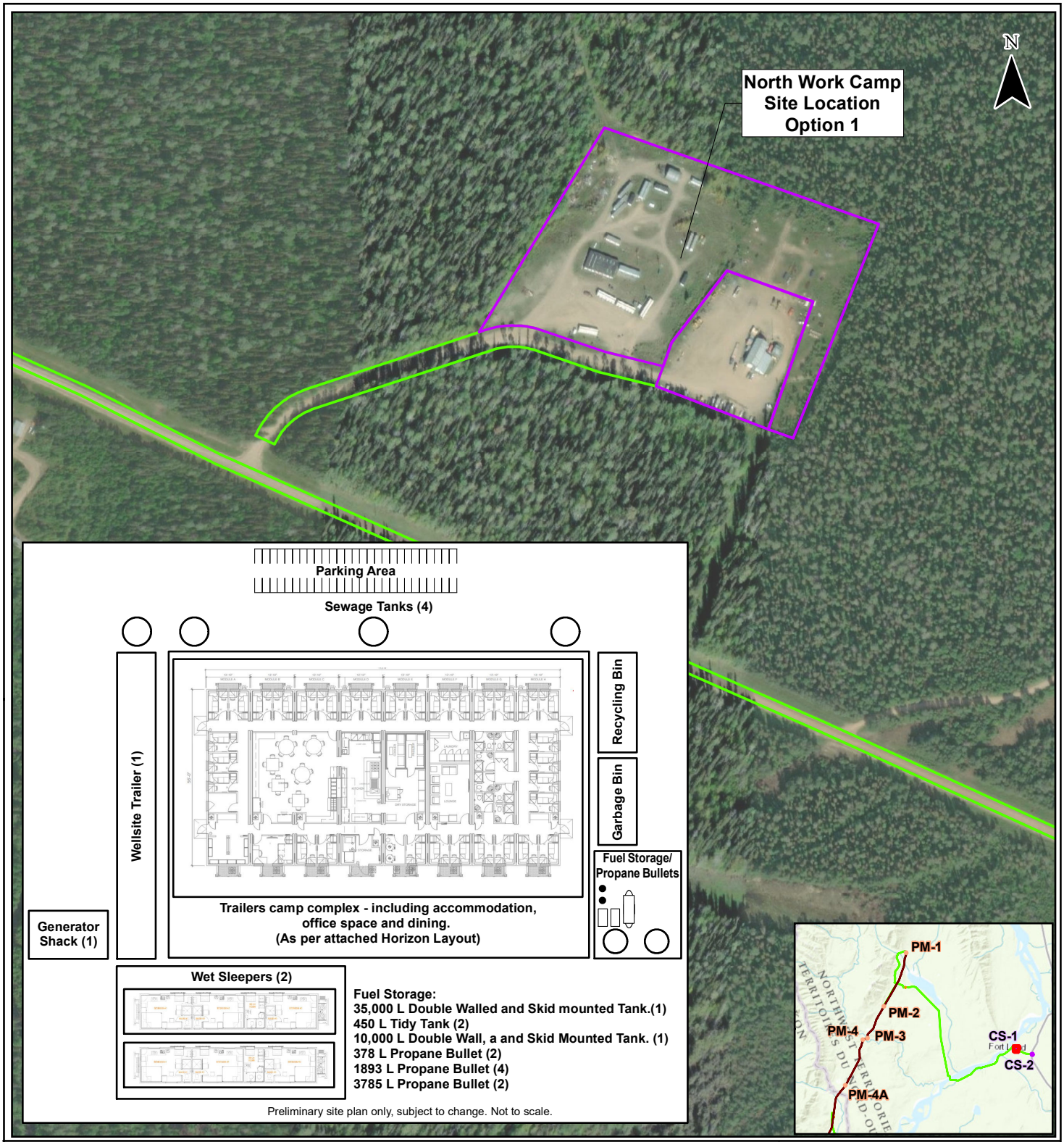

FIGURE 1-2

NORTH WORK CAMP SITE LOCATION OPTION 1

WESTCOAST ENERGY INC.
POINTED MOUNTAIN PIPELINE
ABANDONMENT PROJECT

NAD 1983 UTM Zone 10N
Satellite Imagery: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community.

SCALE: 1:5,000
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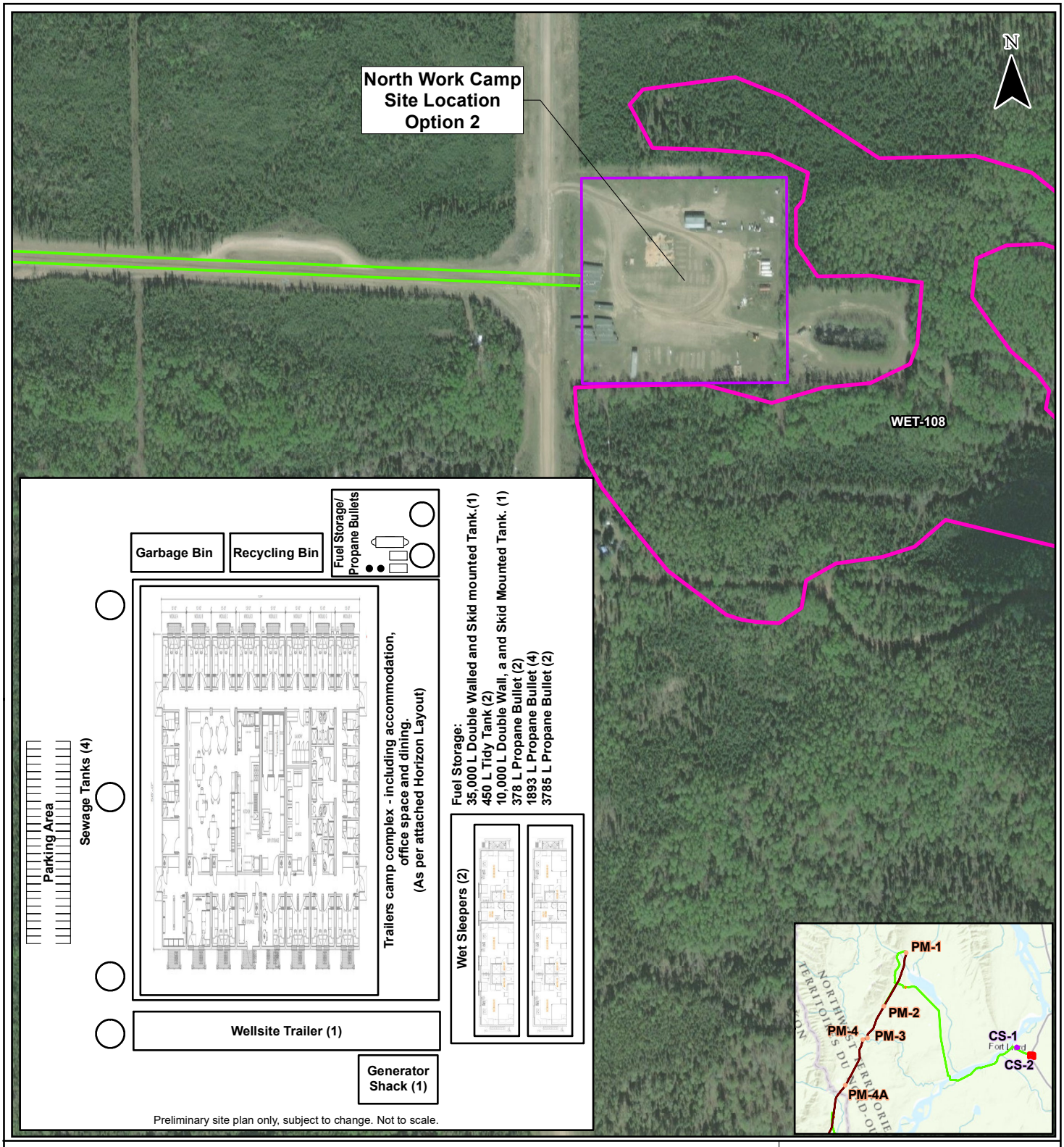
(All Locations Approximate)

Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.

January 2024 | CE862600



Camp
Access Road

Wetland
Treed Fen

FIGURE 1-3

NORTH WORK CAMP SITE LOCATION OPTION 2

WESTCOAST ENERGY INC.
POINTED MOUNTAIN PIPELINE ABANDONMENT PROJECT

NAD 1983 UTM Zone 10N
Satellite Imagery: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community.

SCALE: 1:5,000
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(All Locations Approximate)

Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.

January 2024 | CE862600

Appendix B
Enbridge Sustainability Policy

Enbridge Inc. Sustainability Policy

ENBRIDGE
Life Takes Energy

August 2022

Enbridge Sustainability Policy

Purpose: Enbridge delivers the energy that fuels quality of life and powers our economy. In fulfilling our purpose, we operate in accordance with our Statement on Business Conduct, our core values of Safety, Integrity, Respect and Inclusion, and the principles set out in this Sustainability Policy.

Enbridge is committed to integrating environmental, social and governance (ESG) considerations in all aspects and at all levels of our business. To us, this means operating in a safe, ethical, inclusive, transparent, and socially and environmentally responsible manner, taking a leadership role in the transition to a lower-emission economy, respecting human and Indigenous rights, and meaningfully engaging with and learning from our employees and the communities where we live and work.

Enbridge believes: Integrating ESG considerations into our business strategy, risk assessment processes and operating standards is essential to maintaining the resiliency of our business and creating long-term value for all our stakeholders.

Policy: As a leading energy infrastructure company, Enbridge recognizes that we have a responsibility to address the sustainability risks and opportunities stemming from our business activities. With oversight from the Board of Directors, we strive to:

- Ensure continued alignment of our business practices with our Statement on Business Conduct and core values
- Address the expectations of our employees, local and Indigenous communities in which we operate, governments, shareholders, customers and other stakeholders

Our operating practices are informed by the United Nations (UN) International Bill of Human Rights, the International Labor Organization's Declaration on Fundamental Principles and Rights at Work, the UN Guiding Principles on Business and Human Rights and the Organization for Economic Co-operation and Development's Guidelines for Multinational Enterprises.

This Policy sets out the principles and values that underpin our operating practices at all levels of our organization in the following areas of sustainability and corporate citizenship:

Business ethics and transparency

Enbridge will conduct its business in an open, honest and ethical manner. We are committed to maintaining the highest standards of integrity and corporate governance practices in order to maintain excellence in our daily operations and to promote confidence in our governance systems. Our risk management and operating standards recognize the importance of protecting all of our human, financial, physical, informational, social, environmental and reputational assets.

We report our sustainability performance through our annual Sustainability Report, and we commit to engaging with our stakeholders on how we can continuously improve our sustainability performance.

Enbridge will advise our partners, contractors and suppliers of our expectations regarding safe, ethical, environmental, social and governance related practices, both in connection with our relationships with them, and their relationships with their partners, contractors and suppliers. We will further screen and work with our partners, contractors and suppliers to achieve consistency with this policy.

This Policy applies to activities undertaken by or on behalf of Enbridge and its controlled subsidiaries anywhere in the world.

ENBRIDGE
Life Takes Energy

Our workforce

We are a diverse, equitable and inclusive workplace. We want all employees to feel valued and supported, be treated with fairness and dignity, and have equal opportunity to excel.

Enbridge applies fair wages and other labor practices that respect the national and local laws of the countries and communities where we operate. We are committed to providing equal opportunity in all aspects of employment and career advancement. We believe diversity unlocks innovation and we solve business challenges better when we bring people with diverse perspectives together.

Enbridge believes that everyone has the right to a safe and respectful work environment. We do not engage in or tolerate unlawful workplace conduct, including any form of discrimination, intimidation, harassment or retaliation against people who report incidents in good faith, as set out in our Respectful Workplace, Harassment, Violence Policy.

Enbridge supports financial, physical, social and mental well-being, and we maintain ongoing engagement with our employees to inform our workforce policies and programs. We invest in personal and professional development to equip our people with the skills and knowledge they need to implement Enbridge's business strategy and to support their professional goals.

Enbridge respects the rights of workers and employees to freedom of association and collective bargaining. We maintain and foster a cooperative approach to union and management relationships and to following labor laws of the countries in which we operate and our Statement on Business Conduct.

Health and safety

Safety is one of Enbridge's core values, our highest priority and is embedded in all aspects of our business. Enbridge is committed to ensuring everyone returns home safely at the end of each and every day, and that our assets are operated in a safe and reliable manner. We base our commitment to safety on our care for employees, contractors, the communities in which we operate and the environment.

Enbridge's focus on safety extends to the reliability of our assets, and specifically the design, construction, operation and maintenance of our energy infrastructure. Our attention to system safety underpins our commitment to the personal safety of our workers and the communities and people who live near our operations.

Our approach to health and safety is grounded in six safety principles, which articulate the safety mindset we strive for in pursuit of our goal of ensuring everyone returns home safely.

We operate in accordance with our Safety and Reliability Policy and governance framework, which identifies safety accountabilities and responsibilities at every level of our organization – from front-line employees and contractors to our Executive team and the Enbridge Board of Directors.

We work to build and maintain a culture that strives to engage every member of the Enbridge team in our shared pursuit of outstanding safety performance. We provide our employees and contractors the tools they need to ensure safe and reliable operations through health and safety training, and education programs. We investigate incidents and near misses to identify and address their root causes and we share and apply the lessons we learn to strengthen our systems and make our workplace safer.

Enbridge regularly engages with stakeholders and communities in which we operate about our safety practices and safety culture, and we work with industry peers, regulators and others to promote best practices and continuous improvement.

Environment

Enbridge operates in a manner that minimizes the impacts of our business activities on climate, land, air, water, wildlife and biodiversity, and historical and cultural resources. We integrate environmental considerations over the life of our assets – from design and construction to operation and maintenance, and decommissioning and deactivation of our infrastructure.

Our commitment to the environment is articulated in our Safety and Reliability Policy and our Environmental Protection Program defines environmental management accountabilities and responsibilities in our organization. We continually monitor and assess our environmental performance to enhance our environment program practices across our projects and operations.

We recognize that our projects and operations impact natural habitats, ecosystems and cultural resources. We implement avoidance and mitigation measures that aim to protect and maintain biodiversity, which in turn protect ecosystem function. We work in ways that respect the values and priorities of communities where we operate and the significance of cultural heritage to Indigenous peoples.

Enbridge understands the link between climate change and the environment. Our Climate Policy outlines the key principles that guide our efforts to play a leadership role in the transition to a lower-carbon future and identifies the actions we are taking to manage climate risks and respond to climate opportunities.

ENBRIDGE
Life Takes Energy

Community and Indigenous engagement and inclusion

Enbridge is committed to building and maintaining relationships based on trust and respect, and to contributing to the social and economic development of the communities where we live and work over the life of our assets.

We respect the diverse values and perspectives in communities where we operate, and we seek understanding and support for our projects and operations through timely, open and respectful engagement. We engage potentially affected communities, Indigenous nations and groups, and landowners early to assess and develop measures to avoid and/or mitigate adverse social and environmental impacts of our projects and operations.

Enbridge works with local and Indigenous communities to generate shared social and economic benefits through inclusion in our projects and operations, respecting their interests and priorities. We continually incorporate community and Indigenous perspectives to enhance our engagement approach and practices.

Human rights

Enbridge recognizes that we have a responsibility to address human rights impacts linked to our operations. Respect for human rights is embedded in our core values and all aspects of our business through our Statement on Business Conduct and our operating standards.

Our commitment to respect human rights is guided by the following principles:

- Enbridge will always strive to build trust and demonstrate respect for human dignity and rights in all interactions it enters into, including respect for cultures, customs and values of individuals and groups.
- We adopt a preventative approach that seeks to ensure Enbridge neither causes nor contributes to adverse human rights impacts through our activities, including through meaningful consultation with potentially affected stakeholders.
- Enbridge recognizes that Indigenous peoples have distinct rights. Our Indigenous Peoples Policy outlines the key principles that guide our engagement with Indigenous peoples, nations and groups that have interests in lands on which our assets are located, and our efforts to advance reconciliation with Indigenous peoples. The Policy and Enbridge's approach to Indigenous engagement and inclusion are aligned with and respect the UN Declaration on the Rights of Indigenous Peoples.
- Enbridge's core values of Safety, Integrity, Respect and Inclusion underpin our respect for the rights of others to express their views freely, including human rights defenders who lawfully exercise their right to protect recognized human rights through peaceful means. We strive to engage human rights defenders directly and in good faith about our business activities. Enbridge recognizes the right of human rights defenders to support, promote and defend the human rights of others, in line with the UN Declaration on Human Rights Defenders.
- As a signatory to the United Nations Global Compact (UNGC), Enbridge is committed to upholding the UNGC Principles. We adopt a zero-tolerance policy for human rights abuses and will not engage or be complicit in any activity that solicits or encourages human rights abuse such as threats and acts of violence, including against human rights defenders engaged in peaceful activities in line with the UN Declaration on Human Rights Defenders. Our zero-tolerance policy extends to the use of child labor, forced labor or human trafficking in any form in our operations or supply chain.
- We will work with governments and agencies to support and respect human rights and raise awareness within our sphere of influence. Our Security Policy is aligned with the Voluntary Principles on Security and Human Rights, which recognize that "force is used only when strictly necessary and to an extent proportional to the threat."
- Enbridge will provide ongoing leadership, resources, training and monitoring to ensure the effective implementation of the above principles and we will continue to engage with others to ensure respect for human rights throughout our operations. We will maintain an open-door policy for members of communities directly impacted by our operations and human rights defenders who wish to raise human rights risks. We expect the same of our employees, suppliers, contractors and business partners.

Corporate citizenship

As an employer with team members across North America, and an operator of energy infrastructure that runs through thousands of communities, Enbridge places high priority on the role we can play in contributing to their safety, vibrancy and sustainability. We collaborate with communities, Indigenous nations and groups and other partners to identify and develop opportunities that strengthen community partnerships, support networks and foster constructive relationships.

We consider donation and sponsorship opportunities in communities where we operate that meet established eligibility criteria. Our grant application review and selection process is designed to ensure our community investments meet the needs of our partners, align with our values, are used appropriately and do not result in conflicts of interest. We report our corporate citizenship performance in our annual Sustainability Report.

*Annual sign-off of the Statement on Business Conduct is a condition of employment at Enbridge. Policies supporting the Sustainability Policy are:

- Statement on Business Conduct
- Indigenous Peoples Policy
- Safety and Reliability Policy
- Climate Policy
- Supplier Code of Conduct
- Supplier Diversity Policy
- Privacy Policy
- Whistleblower Policy
- Equal Employment Opportunity, Anti-Discrimination and Affirmative Action Policy

Appendix C
NT-NU Spill Report Form

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

Government of Northwest Territories | Nunavut | Canada | Inuvialuit Land Administration

NT-NU 24-HOUR SPILL REPORT LINE
Tel: (867) 920-8130 • Email: spills@gov.nt.ca

REPORT LINE USE ONLY

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

L	Reported to Spill Line by:	Position:	Employer:	Location Calling From:	Telephone:
M	Any Alternate Contact:	Position:	Employer:	Alternate Contact Location:	Alternate Telephone:

REPORT LINE USE ONLY

N	Received at Spill Line by:	Position:	Employer:	Location Called:	Report Line Number:

Lead Agency: ☐ EC ☐ CCG/TCMSS ☐ GNWT ☐ GN ☐ ILA ☐ AANDC ☐ NEB ☐ Other: _____

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 D
Safety Data Sheets

SAFETY DATA SHEET

US OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR)

Issuing Date 18-Nov-2022 **Revision Date** 18-Nov-2022 **Revision Number** 1

1. Identification

Product identifier

Product Name AMSOIL 5W-30 Small Engine Oil

Other means of identification

Product Code(s) AES

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Lubricating Oil

Restrictions on use Avoid formation of mists

Details of the supplier of the safety data sheet

Initial supplier identifier
AMSOIL INC.
Bay Adelaide Centre, East Tower
22 Adelaide St. W
Toronto, ON, Canada M5H 4E3
T:+1 877-822-5172

Manufacturer Address
AMSOIL INC.
One AMSOIL Center
Superior, WI 54880, USA
T: +1 715-392-7101

E-mail compliance@amsoil.com

Emergency telephone number

Emergency telephone CHEMTREC: Within USA and Canada: 1-800-424-9300
Outside the USA and Canada: +1 703-741-5970
(collect calls accepted) 24/7

2. Hazard(s) identification

Classification

Reproductive toxicity	Category 2

Label elements

Warning

Hazard statements
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. Wear protective gloves, protective clothing, eye protection and face protection.
Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention.
Precautionary Statements - Storage
Store locked up.
Precautionary Statements - Disposal
Dispose of contents and container to an approved waste disposal plant.

Other information
No information available.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	68411-46-1	1-5	-	-

*The exact percentage (concentration) of composition has been withheld as a trade secret.

Chemical Additions
The classification as a carcinogen does not apply as it can be shown that the substance(s) contain(s) less than 3% DMSO extract as measured by IP 346.

4. First-aid measures

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Inhalation Remove person to fresh air and keep comfortable for breathing.

Eye contact Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Skin contact Wash skin with soap and water. Take off contaminated clothing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms May cause temporary eye irritation. May cause gastrointestinal discomfort if consumed in large amounts. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization in susceptible persons. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical Containers can burst or explode when heated, due to excessive pressure build-up. Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous combustion products Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. See section 8 for more information. Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

Reference to other sections For additional information see: Section 8: Exposure controls/personal protection; Section 12: Ecological information; Section 13: Disposal considerations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Do not reuse empty containers. See section 10 for more information. Store in accordance with local regulations.

8. Exposure controls/personal protection

Control parameters

Exposure Limits	Under conditions which may generate mists, the following exposure limits are recommended: Long-term exposure limit (8-hour TWA): 5 mg/m³. Short-term exposure limit (15-minute): 10 mg/m³.
Biological occupational exposure limits	This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls	Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection	If there is a risk of contact:. Wear safety glasses with side shields (or goggles).
Hand protection	If there is a risk of contact: Wear suitable gloves. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.
Skin and body protection	If there is a risk of contact: Wear suitable protective clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Environmental exposure controls	Avoid release to the environment.
General hygiene considerations	Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	
Physical state	Liquid
Color	Amber
Odor	Mild hydrocarbon
Odor threshold	No information available

Property	Values	Remarks • Method
pH		No data available
Melting point / freezing point		No data available
Initial boiling point and boiling range		No data available
Flash point	238 °C / 460.4 °F	Cleveland Open Cup ASTM D 92
Evaporation rate		No data available
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive		No data available

limits		
Lower flammability or explosive limits		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	0.8453	No data available
Water solubility		No data available
Solubility(ies)		No data available
Partition coefficient		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available
Kinematic viscosity	60.4 cSt at 40 ºC 10.79 cSt at 100 ºC	ASTM D445
Dynamic viscosity		No data available

Other information

Explosive properties	No information available.
Oxidizing properties	No information available.
Softening point	No information available
Pour Point	-44ºC [ASTM D 97]
Fire Point	246ºC (COC) [ASTM D 92]
Molecular weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity None under normal use conditions.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid None known based on information supplied.

Incompatible materials None known based on information supplied.

Hazardous decomposition products Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms May cause temporary eye irritation. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization in susceptible persons. May cause gastrointestinal discomfort if consumed in large amounts. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document:
ATEmix (dermal) 9,317.50 mg/kg

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Component Information	
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
Method	OECD Test No. 404: Acute Dermal Irritation/Corrosion
Species	Rabbit
Exposure route	Dermal
Effective dose	0.5 mL
Exposure time	4 hours
Results	Mild skin irritant

Serious eye damage/eye irritation No information available.

Component Information	
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
Method	OECD Test No. 405: Acute Eye Irritation/Corrosion
Species	Rabbit
Exposure route	Eye
Effective dose	0.1 mL
Results	non-irritant

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity The supplier declares that it can be shown that the substance(s) contain less than 3% DMSO extract as measured by IP 346.

Reproductive toxicity Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. Suspected of damaging fertility or the unborn child.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard Due to the viscosity, this product does not present an aspiration hazard.

12. Ecological information

Ecotoxicity Not considered to be harmful to aquatic life. Large or frequent spills may have hazardous effects on the environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Benzenamine, N-phenyl-,	EC50: 51mg/L	LC50: >100mg/L (96h,	-	-

reaction products with 2,4,4-trimethylpentene 68411-46-1	(48h, Daphnia magna)	Danio rerio)		

Persistence and degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene 68411-46-1	6.66

Mobility in soil No information available.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations, Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

14. Transport information

DOT Not regulated

TDG Not regulated

IATA Not regulated

IMDG Not regulated

15. Regulatory information

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

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories
Contact supplier for inventory compliance status
*Contact supplier for details. One or more substances in this product are either not listed on the US TSCA inventory, listed on the confidential US TSCA inventory or are otherwise exempted from inventory listing requirements

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any

chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts 68649-42-3	X	-	X
Diphenylamine 122-39-4	X	X	X
Hydrogenated base oil 64742-56-9	-	X	-

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Issuing Date	18-Nov-2022
Revision Date	18-Nov-2022
Revision Note	Initial Release.

Disclaimer

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

End of Safety Data Sheet

SAFETY DATA SHEET

US OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR)

Issuing Date 07-Oct-2022 **Revision Date** 07-Oct-2022 **Revision Number** 1

1. Identification

Product identifier

Product Name AMSOIL ATV/UTV Powertrain fluid

Other means of identification

Product Code(s) AUPT

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Lubricating Oil

Restrictions on use Avoid formation of mists

Details of the supplier of the safety data sheet

Initial supplier identifier
AMSOIL INC.
Bay Adelaide Centre, East Tower
22 Adelaide St. W
Toronto, ON, Canada M5H 4E3
T:+1 877-822-5172

Manufacturer Address
AMSOIL INC.
One AMSOIL Center
Superior, WI 54880, USA
T: +1 715-392-7101

E-mail compliance@amsoil.com

Emergency telephone number

Emergency telephone CHEMTREC: Within USA and Canada: 1-800-424-9300
Outside the USA and Canada: +1 703-741-5970
(collect calls accepted) 24/7

2. Hazard(s) identification

Classification

This product is not considered hazardous by either the US 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) or the Canadian Workplace Hazardous Material Information System (WHMIS 2015)

Label elements

Hazard statements
Not classified.

Other information

No information available.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Reaction products of 1-decene, hydrogenated	68649-12-7	5-10	-	-

*The exact percentage (concentration) of composition has been withheld as a trade secret.

Chemical Additions
The classification as a carcinogen does not apply as it can be shown that the substance(s) contain(s) less than 3% DMSO extract as measured by IP 346.

4. First-aid measures

Description of first aid measures

General advice Get medical attention immediately if symptoms occur. Show this safety data sheet to the doctor in attendance.

Inhalation Remove person to fresh air and keep comfortable for breathing.

Eye contact Get medical attention if irritation develops and persists. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse thoroughly with plenty of water, also under the eyelids.

Skin contact Get medical attention if irritation develops and persists. Take off contaminated clothing. Wash skin with soap and water.

Ingestion Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms May cause temporary eye irritation. May cause gastrointestinal discomfort if consumed in large amounts. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization in susceptible persons. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Thermal decomposition can lead to release of irritating gases and vapors. Containers can burst or explode when heated, due to excessive pressure build-up.
Hazardous combustion products	Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
Explosion data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.
Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation. See section 8 for more information. Use personal protective equipment as required.
For emergency responders	Use personal protection recommended in Section 8.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Clean contaminated surface thoroughly. After cleaning, flush away traces with water. Prevent product from entering drains.
Reference to other sections	For additional information see: Section 8: Exposure controls/personal protection; Section 12: Ecological information; Section 13: Disposal considerations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. Take off contaminated clothing and wash before reuse. Wash thoroughly after handling. Avoid contact with used product.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Protect from physical damage. Store away from incompatible materials. See section 10 for more information. Do not reuse empty containers.

8. Exposure controls/personal protection

Control parameters

Exposure Limits	Under conditions which may generate mists, the following exposure limits are recommended: Long-term exposure limit (8-hour TWA): 5 mg/m³. Short-term exposure limit (15-minute): 10 mg/m³.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection If there is a risk of contact: Wear safety glasses with side shields (or goggles).

Hand protection If there is a risk of contact: Wear suitable gloves. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection If there is a risk of contact: Wear suitable protective clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Environmental exposure controls Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

General hygiene considerations Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	
Physical state	Liquid
Color	Amber
Odor	Mild hydrocarbon
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH		No data available
Melting point / freezing point		No data available
Initial boiling point and boiling range		No data available
Flash point	230 °C / 446 °F	Cleveland Open Cup ASTM D 92
Evaporation rate		No data available
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	0.8448	No data available
Water solubility		No data available
Solubility(ies)		No data available
Partition coefficient		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available
Kinematic viscosity	36.6 cSt at 40 ºC 7.4 cSt at 100 ºC	ASTM D445

Dynamic viscosity No data available

Other information

Explosive properties	No information available.
Oxidizing properties	No information available.
Softening point	No information available
Pour Point	-50ºC [ASTM D 97]
Fire Point	248ºC (COC) [ASTM D 92]
Molecular weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity None under normal use conditions.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid None known based on information supplied.

Incompatible materials None known based on information supplied.

Hazardous decomposition products Thermal decomposition can lead to release of irritating and toxic gases and vapors. Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

11. Toxicological information

Information on likely routes of exposure

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms May cause temporary eye irritation. May cause gastrointestinal discomfort if consumed in large amounts. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization in susceptible persons. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document:
ATEmix (oral) 25,025.00 mg/kg

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Reaction products of 1-decene, hydrogenated	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity The supplier declares that it can be shown that the substance(s) contain less than 3% DMSO extract as measured by IP 346.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard Due to the viscosity, this product does not present an aspiration hazard.

12. Ecological information

Ecotoxicity Not considered to be harmful to aquatic life. Large or frequent spills may have hazardous effects on the environment.

Persistence and degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Reaction products of 1-decene, hydrogenated 68649-12-7	5

Mobility in soil No information available.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of waste in accordance with environmental legislation, Dispose of in accordance with local regulations.

Contaminated packaging Do not reuse empty containers.

14. Transport information

DOT Not regulated

TDG Not regulated

IATA Not regulated

IMDG Not regulated

15. Regulatory information

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

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories
Contact supplier for inventory compliance status
*Contact supplier for details. One or more substances in this product are either not listed on the US TSCA inventory, listed on the confidential US TSCA inventory or are otherwise exempted from inventory listing requirements

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
Benzene - 71-43-2	Carcinogen Developmental Male Reproductive
Naphthalene - 91-20-3	Carcinogen
Ethylbenzene - 100-41-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Ethylbenzene 100-41-4	X	X	X
2,6-Di-tert-butyl-p-cresol 128-37-0	X	X	X
Xylene	X	X	X

1330-20-7			
Naphthalene 91-20-3	X	X	X
Benzene 71-43-2	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Issuing Date 07-Oct-2022

Revision Date 07-Oct-2022

Revision Note Initial Release.

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

End of Safety Data Sheet

Compliant SDS for GHS: HazCom 2012 / United States; WHMIS 2015 / Canada

SAFETY DATA SHEET

AMSOIL DOT 3 and DOT 4 Synthetic Brake Fluid

Date : 08/15/2016
Version : 1

Section 1. Identification

GHS product identifier : AMSOIL DOT 3 and DOT 4 Synthetic Brake Fluid

Code : BFLV

Product type : Liquid.

Identified uses : Brake fluid. Not to be misted.

Manufacturer : AMSOIL INC.
One AMSOIL Center
Superior, WI 54880
Tel: +1 715-392-7101

Initial Supplier (Canada) : AMSOIL INC.
Bordner, Ladner, Gervais
Scotia Plaza, 40 King St W
Toronto, ON, Canada M5H 3Y4
Tel: +1 416-367-6547

Emergency telephone number (with hours of operation) : CHEMTREC: Within USA and Canada: 1-800-424-9300;
Outside USA and Canada: +1 703-741-5970 (collect calls accepted)
(24/7)

Section 2. Hazards identification

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

Classification of the substance or mixture : TOXIC TO REPRODUCTION (Unborn child) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Suspected of damaging the unborn child.
Harmful 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. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Avoid release to the environment.

Response : IF exposed or concerned: Get medical attention.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified (HNOC)

Physical hazards not otherwise classified (PHNOC) : None known.

Health hazards not otherwise classified (HHNOC) : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.

Product code : BFLV

Ingredient name	%	CAS number
2-(2-Methoxyethoxy)ethanol	0.1 - 1	111-77-3
2,6-di-tert-Butyl-p-cresol	0.1 - 1	128-37-0

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

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

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No known significant effects or critical hazards.

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : No special protection is required.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

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

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.

Avoid contact with used product. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

United States

Ingredient name	Exposure limits
2,6-di-tert-Butyl-p-cresol	**NIOSH REL (United States, 10/2013).** TWA: 10 mg/m³ 10 hours. **ACGIH TLV (United States, 3/2015).** TWA: 2 mg/m³ 8 hours. Form: Inhalable fraction and vapor

Canada

Occupational exposure limits

None.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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

Individual protection measures

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

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

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

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

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

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Colorless to amber.

Odor : Mild.

Odor threshold : Not available.

pH : 7.2

Melting point : -50°C (-58°F)

Boiling point : >265°C (>509°F)

Flash point : Closed cup: >115°C (>239°F)

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1.0672

Solubility : Not available.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Kinematic: 8.17 cm^2/s (817 cSt) (-40°C)

Volatility : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials.

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

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,6-di-tert-Butyl-p-cresol	LD50 Oral	Rat	890 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2,6-di-tert-Butyl-p-cresol	Eyes - Moderate irritant Skin - Moderate irritant	Rabbit Rabbit	- -	24 hours 100 mg 48 hours 500 mg	- -

Sensitization

There is no data available.

Carcinogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

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

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2-(2-Methoxyethoxy)ethanol	Acute EC50 >930 ppm Fresh water Acute LC50 7500000 µg/l Fresh water	Daphnia - Daphnia magna Fish - Lepomis macrochirus	48 hours 96 hours
2,6-di-tert-Butyl-p-cresol	Acute EC50 1440 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
2-(2-Methoxyethoxy)ethanol	-0.47	-	low
2,6-di-tert-Butyl-p-cresol	5.1	330 to 1800	high

Mobility in soil

Soil/water partition coefficient (K_{OC}) : There is no data available.

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

Section 13. Disposal considerations

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

Section 14. Transport information

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

AERG : Not applicable.

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

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

Section 15. Regulatory information

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

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

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
2-(2-Methoxyethoxy)ethanol	Yes.	No.	No.	No.	Yes.
2,6-di-tert-Butyl-p-cresol	No.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	2-(2-(2-Methoxyethoxy)ethoxy)ethanol	112-35-6	40 - 60
Supplier notification	2-(2-(2-Methoxyethoxy)ethoxy)ethanol	112-35-6	40 - 60

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

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : The following components are listed: 2-(2-(2-Methoxyethoxy)ethoxy)ethanol

Pennsylvania : The following components are listed: 2-(2-(2-Methoxyethoxy)ethoxy)ethanol

California Prop. 65

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
2-Methoxyethanol	No.	Yes.	No.	63 µg/day (ingestion)

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

Canada inventory : All components are listed or exempted.

Section 16. Other information

History

Date of issue mm/dd/yyyy : 08/15/2016

Version : 1

Prepared by : AMSOIL INC.

Notice to reader

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

SAFETY DATA SHEET

US OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR)

Issuing Date 03-Oct-2022 **Revision Date** 03-Oct-2022 **Revision Number** 1

1. Identification

Product identifier

Product Name AMSOIL Synthetic ATV/UTV Transmission and Differential Fluid

Other means of identification

Product Code(s) AUDT

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Lubricant

Restrictions on use Avoid formation of mists

Details of the supplier of the safety data sheet

Initial supplier identifier
AMSOIL INC.
Bay Adelaide Centre, East Tower
22 Adelaide St. W
Toronto, ON, Canada M5H 4E3
T:+1 877-822-5172

Manufacturer Address
AMSOIL INC.
One AMSOIL Center
Superior, WI 54880, USA
T: +1 715-392-7101

E-mail compliance@amsoil.com

Emergency telephone number

Emergency telephone CHEMTREC: Within USA and Canada: 1-800-424-9300
Outside the USA and Canada: +1 703-741-5970
(collect calls accepted) 24/7

2. Hazard(s) identification

Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1A

Label elements

Warning

Hazard statements
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling. Avoid breathing dust, fume, gas, mist, vapors and spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves, eye protection and face protection.
Precautionary Statements - Response
Specific treatment is urgent (see supplemental first aid instructions on this label).
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice and attention.
Skin
IF ON SKIN: Wash with plenty of water and soap. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice and attention.
Precautionary Statements - Disposal
Dispose of contents and container to an approved waste disposal plant.

Other information
Harmful to aquatic life with long lasting effects. Harmful to aquatic life.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Amines, C12-14-tert-alkyl	68955-53-3	0.1-1	-	-
Bis(2-ethylhexyl) hydrogen phosphate	298-07-7	0.1-1	-	-
2-Ethylhexyl dihydrogen phosphate	1070-03-7	0.1-1	-	-
(Z)-Octadec-9-enylamine	112-90-3	0.1-1	-	-

*The exact percentage (concentration) of composition has been withheld as a trade secret.

Chemical Additions
The classification as a carcinogen does not apply as it can be shown that the substance(s) contain(s) less than 3% DMSO extract as measured by IP 346.

4. First-aid measures

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician. Wash off immediately with soap and plenty of water for at least 15 minutes.
Ingestion	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms	Itching. Rashes. Hives. May cause redness and tearing of the eyes. Burning sensation. May cause gastrointestinal discomfort if consumed in large amounts. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing.

Indication of any immediate medical attention and special treatment needed

Note to physicians	May cause sensitization in susceptible persons. Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Product is or contains a sensitizer. May cause sensitization by skin contact. Containers can burst or explode when heated, due to excessive pressure build-up. Thermal decomposition can lead to release of irritating gases and vapors.
Hazardous combustion products	Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

Explosion data

Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Other information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Clean contaminated surface thoroughly. After cleaning, flush away traces with water. Prevent product from entering drains.
Reference to other sections	For additional information see: Section 8: Exposure controls/personal protection; Section 12: Ecological information; Section 13: Disposal considerations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with used product. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Do not reuse empty containers. Protect from physical damage. Keep out of the reach of children. Store in accordance with local regulations.

8. Exposure controls/personal protection

Control parameters

Exposure Limits	Under conditions which may generate mists, the following exposure limits are recommended: Long-term exposure limit (8-hour TWA): 5 mg/m³. Short-term exposure limit (15-minute): 10 mg/m³.
Biological occupational exposure limits	This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls	Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection	If there is a risk of contact: Wear safety glasses with side shields (or goggles).
Hand protection	If there is a risk of contact: Wear suitable gloves. Impervious gloves. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.
Skin and body protection	If there is a risk of contact: Wear suitable protective clothing. Long sleeved clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Environmental exposure controls	Avoid release to the environment.
General hygiene considerations	Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	
Physical state	Liquid
Color	Yellow
Odor	Mild Sulfur
Odor threshold	No information available

Property	Values	Remarks • Method
pH		No data available
Melting point / freezing point		No data available
Initial boiling point and boiling range		No data available
Flash point	210 °C / 410 °F	Cleveland Open Cup ASTM D 92
Evaporation rate		No data available
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	0.8751	No data available
Water solubility		No data available
Solubility(ies)		No data available
Partition coefficient		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available
Kinematic viscosity	120.4 cSt at 40 ºC 15.6 cSt at 100 ºC	ASTM D445
Dynamic viscosity		No data available

Other information

Explosive properties	No information available.
Oxidizing properties	No information available.
Softening point	No information available
Pour Point	-43ºC [ASTM D 97]
Fire Point	220ºC (COC) [ASTM D 92]
Molecular weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity	None under normal use conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	Excessive heat. Incompatible materials.
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.
Hazardous decomposition products	Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.

Skin contact May cause sensitization by skin contact. Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). Causes skin irritation.

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes. May cause gastrointestinal discomfort if consumed in large amounts. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing.

Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Amines, C12-14-tert-alkyl	= 612 mg/kg (Rat)	= 251 mg/kg (Rat)	= 0.5 mg/L
Bis(2-ethylhexyl) hydrogen phosphate	= 1400 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	-
2-Ethylhexyl dihydrogen phosphate	= 3450 mg/kg (Rat)	> 4650 mg/kg (Rabbit)	-
(Z)-Octadec-9-enylamine	= 1689 mg/kg (Rat)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

Component Information	
Amines, C12-14-tert-alkyl (68955-53-3)	
Method	OECD 405
Species	Rabbit
Exposure route	Eye
Effective dose	0.1 mL
Exposure time	30 seconds
Results	Eye Damage

Respiratory or skin sensitization May cause an allergic skin reaction.

Component Information

Amines, C12-14-tert-alkyl (68955-53-3)	
Method	OECD Test No. 406: Skin Sensitization
Species	Guinea pig
Exposure route	Dermal
Results	Sensitizing

Germ cell mutagenicity No information available.

Carcinogenicity The supplier declares that it can be shown that the substance(s) contain less than 3% DMSO extract as measured by IP 346.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard Due to the viscosity, this product does not present an aspiration hazard.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Amines, C12-14-tert-alkyl 68955-53-3	-	LC50: =1.3mg/L (96h, Oncorhynchus mykiss)	-	-
Bis(2-ethylhexyl) hydrogen phosphate 298-07-7	-	LC50: =20mg/L (96h, Oncorhynchus mykiss)	-	-

Persistence and degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Amines, C12-14-tert-alkyl 68955-53-3	2.9

Mobility in soil No information available.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of waste in accordance with environmental legislation, Dispose of in accordance with local regulations.

Contaminated packaging Do not reuse empty containers.

14. Transport information

DOT Not regulated

TDG	Not regulated
IATA	Not regulated
IMDG	Not regulated

15. Regulatory information

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

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories
Contact supplier for inventory compliance status
*Contact supplier for details. One or more substances in this product are either not listed on the US TSCA inventory, listed on the confidential US TSCA inventory or are otherwise exempted from inventory listing requirements

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
Ethyl acrylate - 140-88-5	Carcinogen
1,4-dioxane - 123-91-1	Carcinogen
Ethylene oxide - 75-21-8	Carcinogen Developmental Female Reproductive Male Reproductive

Methyloxirane - 75-56-9	Carcinogen
Naphthalene - 91-20-3	Carcinogen
Benzene - 71-43-2	Carcinogen Developmental Male Reproductive
Ethylbenzene - 100-41-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Bis(2-ethylhexyl) hydrogen phosphate 298-07-7	X	-	-
Ethyl acrylate 140-88-5	X	X	X
Butan-1-ol 71-36-3	X	X	X
Phosphoric acid 7664-38-2	X	X	X
Phenol 108-95-2	X	X	X
1,4-dioxane 123-91-1	X	X	X
Ethylene oxide 75-21-8	X	X	X
Methyloxirane 75-56-9	X	X	X
Naphthalene 91-20-3	X	X	X
2,6-Di-tert-butyl-p-cresol 128-37-0	X	X	X
Xylene 1330-20-7	X	X	X
Ethylbenzene 100-41-4	X	X	X
Benzene 71-43-2	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal

Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Issuing Date	03-Oct-2022
Revision Date	03-Oct-2022
Revision Note	Initial Release.

Disclaimer

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

End of Safety Data Sheet

Recochem Inc.
Your Partner in Formulating Solutions

Safety Data Sheet

Antifreeze/Coolant

SECTION 1. IDENTIFICATION

Product Identifier	Antifreeze/Coolant
Other Means of Identification	16-924R, 26-929R, 26-929R-1000, 16-924R, 26-929R, 26-929R-1000, BULK-16930FCR
Recommended Use	Please refer to Product label.
Restrictions on Use	None known.
Manufacturer/Supplier Identifier	Recochem Inc., 850 Montee de Liesse, Montreal, QC, H4T 1P4, Compliance and Regulatory Department, 905-878-5544, www.recochem.com
Emergency Phone No.	CANUTEC, 613-996-6666, 24 Hours
SDS No.	1991

SECTION 2. HAZARD IDENTIFICATION

Classification

Acute toxicity (Oral) - Category 4; Reproductive toxicity - Category 1A; Specific target organ toxicity (repeated exposure) - Category 2

Label Elements

Signal Word:
Danger

Hazard Statement(s):
H302 Harmful if swallowed.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs (kidneys) through prolonged or repeated exposure if swallowed.

Precautionary Statement(s):
Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe fume, mist, vapours, spray.
P264 Wash hands and skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves, eye protection.

Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTRE or doctor.

P330 Rinse mouth.
P308 + P313 IF exposed or concerned: Get medical advice or attention.

Storage:
Store in a well ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Disposal:
Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Other Hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Ethylene glycol	107-21-1	80-100		
4-tert-Butylbenzoic acid	98-73-7	1-5		

Notes

Use of Generic SDS:
If the concentration or actual concentration range of an ingredient of a particular hazardous product in the series is different from the concentration or actual concentration range disclosed for the rest of the series, either the concentration or the actual concentration range must be indicated beside that ingredient under item 3 (Composition/Information on ingredients) of the SDS. Furthermore, if any other specific information element(s) (such as flash point, numerical measure of toxicity, etc.) for a particular hazardous product in the series differs from that of the other products in the series (without affecting the classification), the information element relevant to that hazardous product must be disclosed on the SDS with an indication to which hazardous product each relates.

Source: Health Canada - Technical Guidance on the Requirements of the Hazardous Products Act and the Hazardous Products Regulations WHMIS 2015 Supplier Requirements - pg 117

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Call a Poison Centre or doctor if you feel unwell.

Skin Contact

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes. Call a Poison Centre or doctor if you feel unwell. Clean clothing, shoes and leather goods.

Eye Contact

If eye irritation persists, get medical advice or attention. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open.

Ingestion

Rinse mouth with water. Call a Poison Centre or doctor if you feel unwell.

Most Important Symptoms and Effects, Acute and Delayed

If swallowed: There are 3 stages of effects, which can overlap. Early symptoms can include upset stomach, slurred speech, clumsiness, drowsiness, and convulsions. Second stage symptoms can include rapid heartbeat and breathing, bluish lips and skin, fluid in the lungs and heart failure. In the last stage, there can be kidney stones and kidney damage with lower back pain, and increased then decreased urine production. There may be delayed nervous system effects such as paralysis of the face, clumsiness, impaired hearing and blurred vision. Death can occur at any stage.

Immediate Medical Attention and Special Treatment

Target Organs

Digestive system, nervous system, heart, digestive system, kidneys, skin.

Special Instructions

The signs and symptoms in ethylene glycol poisoning are those of metabolic acidosis, central nervous system depression and kidney injury. Clinical chemistry may reveal anion-gap metabolic acidosis and uremia. Treatment with ethanol to inhibit the metabolism of glycol to oxalate.Early administration of ethanol may counter the toxic effects of ethylene glycol (cardiopulmonary effects attributed to metabolic acidosis and renal damage). Hemodialysis or peritoneal dialysis have been of benefit. Pre-existing respiratory and skin disorders may be aggravated by over-exposure to this product. Treat symptomatically and supportively.

Medical Conditions Aggravated by Exposure

Dermatitis.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder or appropriate foam.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Can ignite if strongly heated.
In a fire, the following hazardous materials may be generated: irritating chemicals.

Special Protective Equipment and Precautions for Fire-fighters

Review Section 6 (Accidental Release Measures) for important information on responding to leaks/spills.
See Skin Protection in Section 8 (Exposure Controls/Personal Protection) for advice on suitable chemical protective materials.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

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

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

When handling concentrated product: avoid breathing in this product. Prevent skin contact. Avoid repeated or prolonged skin contact. Do not swallow. Avoid generating vapours or mists. Avoid heating that will increase the amount of vapours. Avoid repeated or prolonged skin contact with product or with contaminated equipment/surfaces. For large-scale use: do NOT eat, drink or store food in work areas. Remove contaminated clothing and protective equipment before entering eating areas or leaving work area. Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area.

Conditions for Safe Storage

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Ethylene glycol	10 mg/m3	100 mg/m3	Not established	50 ppm		
4-tert-Butylbenzoic acid	Not established	Not established	Not established	Not established		

Appropriate Engineering Controls

The hazard potential of this product is relatively low. General ventilation is usually adequate. Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air.

Individual Protection Measures

Eye/Face Protection

Not required but it is good practice to wear safety glasses or chemical safety goggles.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.
Nitrile rubber.

Respiratory Protection

Not normally required if product is used as directed. For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an appropriate cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Available in these colours: Clear, Yellow, Gold, Red, Blue, Green, Amber, Pink, Orange, Purple, White, Brown, Grey, Teal.
Odour	Odourless
Odour Threshold	Not available
pH	7.8 - 9.5
Melting Point/Freezing Point	-13 ºC (9 ºF) (melting); -13 ºC (9 ºF) (freezing)
Initial Boiling Point/Range	197 ºC (387 ºF)
Flash Point	111 ºC (232 ºF)
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	Not available
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	1.1150 - 1.1135 at 20 ºC
Solubility	Not available in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available

Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available (kinematic); Not available (dynamic)

Other Information

Physical State	Liquid
Molecular Weight	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

None known.

Incompatible Materials

Slightly reactive or incompatible with the following materials: oxidizing agents (e.g. peroxides), strong acids (e.g. hydrochloric acid), strong bases (e.g. sodium hydroxide).
Not corrosive to metals.

Hazardous Decomposition Products

None known.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Skin contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Ethylene glycol	2725 mg/m3 (rat) (4-hour exposure)	1560 mg/kg Human - Male	9530 mg/kg (rabbit)
4-tert-Butylbenzoic acid	> 1802 mg/m3 (rat) (4-hour exposure)	568 mg/kg (mouse)	300 mg/kg (mouse)

LC50: No information was located.

LD50 (oral): No information was located.

LD50 (dermal): No information was located.

Skin Corrosion/Irritation

Human experience and animal tests show mild irritation.

Serious Eye Damage/Irritation

May cause serious eye irritation based on information for closely related materials. Symptoms include sore, red eyes, and tearing.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

At high concentrations as a mist nose and throat irritation. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

Skin Absorption

At high concentrations may cause Symptoms may include redness, rash, swelling and itching.

Ingestion

Toxic, can cause death based on information for closely related materials. depression of the central nervous system, and effects on the heart and kidneys. In some cases, there may be delayed effects on the nervous system. There are 3 stages of effects, which can overlap. Early symptoms can include upset stomach, slurred speech, clumsiness, drowsiness, and convulsions. Second stage symptoms can include rapid heartbeat and breathing, bluish lips and skin, fluid in the lungs and heart failure. In the last stage, there can be kidney stones and kidney damage with lower back pain, and increased then decreased urine production. There may be delayed nervous system effects such as paralysis of the face, clumsiness, impaired hearing and blurred vision. Death can occur at any stage.

Aspiration Hazard

Not known to be an aspiration hazard.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

May cause dermatitis. Symptoms may include dry, red, cracked skin (dermatitis).
May cause Following skin contact and/or if swallowed: harmful effects on the kidneys.

Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer. Not known to be a skin sensitizer.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Ethylene glycol	Not Listed	A4	Not Listed	Not Listed
4-tert-Butylbenzoic acid	Not Listed	Not designated	Not Listed	Not Listed

Reproductive Toxicity

Development of Offspring

Studies in people and animals show effects on the unborn child.

Sexual Function and Fertility

Studies in people and animals show effects on sexual function and/or fertility.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

Not known to be a mutagen.

Interactive Effects

No information was located.

Other Information

TOXIC SUBSTANCE: KEEP AWAY FROM ANIMALS AND SMALL CHILDREN.

SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

Ecotoxicity

Chronic Aquatic Toxicity

Chemical Name	NOEC Fish	EC50 Fish	NOEC Crustacea	EC50 Crustacea
Ethylene glycol	39140 mg/L (Oncorhynchus mykiss (rainbow trout))		24000 mg/L (Daphnia magna (water flea))	
4-tert-Butylbenzoic acid	Not available		Not available	

Persistence and Degradability

No information was located.

Bioaccumulative Potential

This product and its degradation products are not expected to bioaccumulate.

Mobility in Soil

No information was located.

Other Adverse Effects

There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

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

SECTION 14. TRANSPORT INFORMATION

Not regulated under Canadian TDG regulations.

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID (Ethylene glycol)	9	III

Environmental Hazards: Not applicable (Ethylene glycol)

Special Precautions: Please note: In single containers of 5000 lbs capacity or less this product is exempt from DOT regulations (non regulated). Does not require label or placards. Regulated Quantity (RQ)= 5000 lbs (2268 kg) (as ethylene glycol) For bulk shipments equal to or greater than Regulated Quantity (RQ), please adhere to classification as outlined in DOT Classification section.

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Proof of Dangerous Goods Classification

Date of Classification	January 11, 2017
Technical Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID
Classification	9 PG III
Classification Method	As per regulation for ethylene glycol.

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

Additional USA Regulatory Lists

California Proposition 65: WARNING: Birth Defects and other Reproductive Harm - www.P65Warnings.ca.gov/product.

Custom Regulatory 1

Consumer Product Safety Improvement Act of 2008 General Conformity Certification
The Supplier identified in Section 1 of this MSDS has evaluated this product and certifies it to be labeled and packaged in compliance with the applicable provisions of the Federal Hazardous Substance Act as stated in 16 CFR 1500 and enforced by the Consumer Product Safety Commission, and where applicable the products that require Child Resistant Closures are packaged in accordance with the Poison Prevention Packaging Act as stated in 16 CFR 1700 and enforced by the Consumer Product Safety Commission. All closures have been tested in accordance with the latest protocols. No other testing is required to certify compliance with the above. The date of manufacture is stamped on the product container.

SECTION 16. OTHER INFORMATION

SDS Prepared By	Compliance and Regulatory Department
Phone No.	905-878-5544
Date of Preparation	August 21, 2020
Date of Last Revision	November 16, 2020
Revision Indicators	The following SDS content was changed on November 16, 2020: SECTION 1. IDENTIFICATION; Other Means of Identification.
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).
Additional Information	We are committed to uphold the Industry Consumer Ingredient Communication Voluntary Initiative. Please send us your request by visiting our website at www.recochem.com. Ingredients present (intentionally added ingredients) at a concentration of greater than one percent (1%) shall be listed in descending order of predominance. Ingredients present at a concentration of not more than one percent shall be listed but may be disclosed without respect to order of predominance.
Disclaimer	Notice to reader: To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Clarity Hydraulic Oil AW 32, 46, 68, 100

Product Use: Hydraulic Oil
Product Number(s): 219612, 230340, 230341, 230342, 255702, 278022, 278023, 278024
Synonyms: Clarity Hydraulic Oil AW 32 ISOCLEAN Certified; Clarity Hydraulic Oil AW 46 ISOCLEAN Certified; Clarity Hydraulic Oil AW 68 ISOCLEAN Certified
Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

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

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION:

- Reproductive toxicant (fertility): Category 2.

Signal Word: Warning
Health Hazards:
- Suspected of damaging fertility.

PRECAUTIONARY STATEMENTS:
Prevention:
- Obtain special instructions before use.

- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.

Response:
- IF exposed or concerned: Get medical advice/attention.

Storage:
- Store locked up.

Disposal:
- Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight
N-Phenylbenzenamine, reaction products with 2,4,4-trimethylpentene	68411-46-1	0.1 - < 1 %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: High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.
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:
Reproduction and Birth Defects: Swallowing this material may cause adverse reproductive effects based on animal data. See Section 11 for additional information. Risk depends on duration and level of exposure.

Indication of any immediate medical attention and special treatment needed
Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.
Unusual Fire Hazards: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

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.

SECTION 6 ACCIDENTAL RELEASE MEASURES

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

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Wash thoroughly after handling.
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 general ventilation, local exhaust ventilation, or a combination of both.

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
Neoprene	0.61	120
Nitrile	0.8	120
Polyvinyl Chloride (PVC)	1.1	120
Viton Butyl	0.3	120

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
Highly refined mineral oil (C15 - C50)	ACGIH	--	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	--	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

Color: Colorless 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: Not Applicable
Melting Point: No data available
Density: 0.8618 kg/l - 0.8694 kg/l @ 15°C (59°F) (Typical)
Viscosity: 32 mm2/s - 110 mm2/s @ 40°C (104°F)
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) 190 °C (374 °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 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 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 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 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: This material is suspected of damaging fertility. 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:
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:
Reproductive toxicity

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	

No components of this material were found on the regulatory lists above.

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

One or more components is listed on ELINCS (European Union). All other components are listed or exempted from listing on EINECS.

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 (Hydraulic oil)

SECTION 16 OTHER INFORMATION

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

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

REVISION STATEMENT: SECTION 02 - Hazard Statements information was added.
SECTION 02 - Health Classification information was added.
SECTION 02 - Pictogram information was added.
SECTION 02 - Precautionary Statements information was added.
SECTION 02 - Signal Word information was added.
SECTION 03 - Composition information was modified.
SECTION 04 - Delayed Health Effects - Reproductive Toxicity information was modified.
SECTION 07 - Precautionary Measures information was modified.
SECTION 08 - Engineering Control Measures information was modified.
SECTION 08 - Personal Protective Equipment information was modified.
SECTION 11 - Reproductive Toxicity information was modified.
SECTION 12 - Ecological Information information was added.
SECTION 12 - Ecological Information information was deleted.
SECTION 15 - Chemical Inventories information was modified.
SECTION 15 - SARA 311 EPCRA Score information was added.
SECTION 15 - SARA 311 EPCRA Score information was deleted.
SECTION 16 - HMIS Rating information was modified.

Revision Date: November 04, 2022

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

DIESEL FUEL

000003000395

Version 6.3 Revision Date 2022/02/01 Print Date 2022/02/01

SECTION 1. IDENTIFICATION

Product name	:	DIESEL FUEL
Synonyms	:	Seasonal Diesel, #2 Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, OSX, D50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend, B1, B2, B5, Renewable Diesel blend (RX where X is 2- 50, X is representative of volume %), Diesel Low Cloud (LC), Marine Gas Oil, Marine Gas Oil Dyed
Product code	:	103213, 100679, 100654, 100653, 100105, 100992, 100637, 100634, 100631, 100638, 100641, 100635, 100632, 100684, 100683, 100657, 100656, 100655, 100687, 100686, 100685, 100681, 100661, 100659, 100667, 100666, 100665, 100682, 100671, 100669, 100664, 100662, 100680, 100781, 100964, 103204, 103180, 103179, 103193, 103178, 103136, 103135, 103134, 103133, 103132, 103131, 101799, 102907, 102762, 102763, 102755, 102302, 102744, 101801, 100678, 100677, 101802, 100107, 100668, 100658, 100911, 100663, 100652, 100460, 100065, 101796, 101793, 101795, 101792, 101794, 101791, 100768, 100643, 100642, 100103, 101798, 101800, 101797, 101788, 101789, 101787, 102531, 100734, 100733, 100640, 100997, 100995, 100732, 100731, 100994
Manufacturer or supplier's details		Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary Alberta T2P 3E3 Canada, Telephone: 1-866-786-2671
Emergency telephone number		CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887; Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

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

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Bright oily liquid.
Colour	Clear to yellow (This product may be dyed red for taxation purposes)

SAFETY DATA SHEET

DIESEL FUEL

000003000395

Version 6.3 Revision Date 2022/02/01 Print Date 2022/02/01

Odour	Mild petroleum oil like.

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Inhalation) : Category 4

Skin irritation : Category 2

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Central nervous system)

Specific target organ toxicity - repeated exposure : Category 2 (Liver, thymus, Bone)

Aspiration hazard : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Harmful if inhaled.
May cause drowsiness or dizziness.
Suspected of causing cancer.
May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

Precautionary statements : **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:

IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Primary Routes of Entry : Eye contact
Ingestion
Inhalation
Skin contact

Aggravated Medical Condition : None known.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
Kerosine (petroleum), hydrodesulfurized; Kerosine — unspecified	64742-81-0	48 - 100 %
Kerosine (petroleum); Straight run kerosine	8008-20-6	
Fuels, diesel; Gasoil — unspecified	68334-30-5	
Alkanes, C10-20-branched and linear	928771-01-1	0 - 50 %
Fatty acids, C16-18 and C18-unsatd., Me esters	67762-38-3	0 - 20 %

All above concentrations are in percent by weight.

SECTION 4. FIRST AID MEASURES

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

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

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

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (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	:	For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation.

Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

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

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Kerosine (petroleum), hydrodesulfurized; Kerosine — unspecified	64742-81-0	TWA	200 mg/m3 (As total hydrocarbon vapour)	ACGIH
		TWA	200 mg/m3 (total hydrocarbon vapor)	CA AB OEL
		TWA	525 mg/m3	CA ON OEL
		TWA	200 mg/m3 (As total hydrocarbon vapour)	ACGIH
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
Kerosine (petroleum); Straight run kerosine	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	ACGIH

SAFETY DATA SHEET

DIESEL FUEL

000003000395

Version 6.3 Revision Date 2022/02/01 Print Date 2022/02/01

			vapor)	
Fuels, diesel; Gasoil — unspecified	68334-30-5	TWA	100 mg/m3 (total hydrocarbons)	CA AB OEL
		TWA (Vapour and inhalable aerosols)	100 mg/m3 (total hydrocarbons)	CA BC 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. 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	:	Bright oily liquid.
Colour	:	Clear to yellow (This product may be dyed red for taxation purposes)
Odour	:	Mild petroleum oil like.
Odour Threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Boiling point/boiling range	:	150 - 371 °C (302 - 700 °F)
Decomposition temperature		No data available
Flash point	:	> 40 °C (104 °F) Method: closed cup
Auto-Ignition Temperature	:	204 °C (399 °F)
Evaporation rate	:	No data available
Flammability	:	Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite.
Upper explosion limit	:	6 %(V)
Lower explosion limit	:	0.7 %(V)
Vapour pressure	:	7.5 mmHg (20 °C / 68 °F)
Relative vapour density	:	4.5
Relative density	:	0.8 - 0.88
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, kinematic	:	1.3 - 4.1 cSt (40 °C / 104 °F)

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable at normal ambient temperature and pressure.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerisation does not occur.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents and acids.
Hazardous decomposition products	:	May release 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

Product:

Acute oral toxicity	:	Remarks: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Acute toxicity estimate: 1.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method Assessment: The component/mixture is moderately toxic after short term inhalation. Remarks: Harmful if inhaled.
Acute dermal toxicity	:	Assessment: The substance or mixture has no acute dermal toxicity

Components:

Kerosine (petroleum), hydrodesulfurized; Kerosine — unspecified:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg,
Acute inhalation toxicity	:	LC50 (Rat): > 5.2 mg/l Exposure time: 4 hrs Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg,

Kerosine (petroleum); Straight run kerosine:

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

Fuels, diesel; Gasoil — unspecified:

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

Skin corrosion/irritation

Product:

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Product:

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

Respiratory or skin sensitisation

Product:

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

Germ cell mutagenicity

Product:

Germ cell mutagenicity- Assessment	Based on available data, the classification criteria are not met.

Carcinogenicity

Product:

Carcinogenicity - Assessment	Suspected of causing cancer.

Reproductive toxicity

Product:

Reproductive toxicity - Assessment	Based on available data, the classification criteria are not met.

STOT - single exposure

Product:

Target Organs: Central nervous system
Remarks: May cause drowsiness or dizziness.

STOT - repeated exposure

Product:

Target Organs: Liver, thymus, Bone
Remarks: May cause damage to organs through prolonged or repeated exposure.

No data available

Aspiration toxicity

Product:

May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

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

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

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.
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 1202
Proper shipping name	:	Diesel fuel
Class	:	3
Packing group	:	III
Labels	:	Class 3 - Flammable Liquid
Packing instruction (cargo aircraft)	:	366

IMDG-Code

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

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

National Regulations

TDG

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

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

SAFETY DATA SHEET

DIESEL FUEL

000003000395

Version 6.3 Revision Date 2022/02/01 Print Date 2022/02/01

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
Revision Date	:	2022/02/01

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.

Revision date: 4/4/2018

SAFETY DATA SHEET
AMSOIL Engine Degreaser

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200 and WHMIS 2015, in compliance with the Hazardous Product Act (HPA, as amended) and the requirements of the Hazardous Product Regulations (HPR).

1. Identification

Product identifier

Product name AMSOIL Engine Degreaser

Product number AEDSC

Recommended use of the chemical and restrictions on use

Application Engine degreaser.

Uses advised against No specific uses advised against are identified.

Details of the supplier of the safety data sheet

Supplier
AMSOIL INC.
Bordner, Ladner, Gervais
Scotia Plaza, 40 King St W
Toronto, ON, Canada M5H 3Y4
T: +1 416-367-6547

Manufacturer
AMSOIL INC.
One AMSOIL Center,
Superior, WI 54880, USA.
T: +1 715-392-7101
compliance@amsoil.com

Emergency telephone number

Emergency telephone
CHEMTREC: Within USA and Canada: 1-800-424-9300
Outside the USA and Canada: +1 703-741-5970
(collect calls accepted) 24/7

2. Hazard(s) identification

Classification of the substance or mixture

OSHA/WHMIS Regulatory Status This Product is Hazardous under the OSHA Hazard Communication Standard and according to the hazard criteria of the Hazardous Product Regulations.

Physical hazards Flam. Aerosol 1 - H222 Press. Gas, Compressed - H280

Health hazards Eye Dam. 1 - H318 Asp. Tox. 1 - H304

Environmental hazards Aquatic Chronic 3 - H412

Label elements

Pictogram

Signal word Danger

Revision date: 4/4/2018

AMSOIL Engine Degreaser

Hazard statements

H222 Extremely flammable aerosol.
H280 Contains gas under pressure; may explode if heated.
H304 May be fatal if swallowed and enters airways.
H318 Causes serious eye damage.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Pressurized container: Do not pierce or burn, even after use
P273 Avoid release to the environment.
P280 Wear protective gloves, eye and face protection.
P301+P310 If swallowed: Immediately call a poison center/ 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.
P331 Do NOT induce vomiting.
P405 Store locked up.
P410+P403 Protect from sunlight. Store in a well-ventilated place.
P412 Do not expose to temperatures exceeding 50°C/122°F.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

Hydrogenated base oil, Alcohols, C9-11, ethoxylated

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

Hydrogenated base oil **50 - 85%**
CAS number: 64742-47-8

Classification
Asp. Tox. 1 - H304

Hydrogenated base oil **5 - <10%**
CAS number: 8008-20-6

Classification
Flam. Liq. 3 - H226
Skin Irrit. 2 - H315
STOT SE 3 - H336
Aquatic Chronic 2 - H411

Alcohols, C9-11, ethoxylated **3 - <5%**
CAS number: 68439-46-3

Classification
Eye Dam. 1 - H318

Revision date: 4/4/2018

AMSOIL Engine Degreaser

Carbon dioxide CAS number: 124-38-9	**2.5 - <3%**
Classification Press. Gas, Compressed - H280	

The full text for all hazard statements is displayed in Section 16.

Composition comments The exact percentage/concentration is withheld as a trade secret in accordance with 29 CFR 1910.1200.

4. First-aid measures

Description of first aid measures

General information Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

Inhalation Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.

Ingestion Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

Skin Contact Rinse with water.

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.

Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

General information See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation A single exposure may cause the following adverse effects: Headache. Nausea, vomiting. Central nervous system depression. Drowsiness, dizziness, disorientation, vertigo. Narcotic effect.

Ingestion Due to the physical nature of this product, it is unlikely that ingestion will occur. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

Skin contact Prolonged skin contact may cause temporary irritation.

Eye contact Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

Indication of immediate medical attention and special treatment needed

Revision date: 4/4/2018

AMSOIL Engine Degreaser

Notes for the doctor Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media The product is flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up. Bursting aerosol containers may be propelled from a fire at high speed. If aerosol cans are ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. Vapors may form explosive mixtures with air.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapors. Evacuate area. Keep upwind to avoid inhalation of gases, vapors, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves, that provides a basic level of protection during chemical incidents is defined by the Canada Occupational Health and Safety Regulations, by provincial guidelines on occupational health and safety or by NFPA standards if applicable.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Provide adequate ventilation. No smoking, sparks, flames or other sources of ignition near spillage.

Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Revision date: 4/4/2018

AMSOIL Engine Degreaser

Methods for cleaning up

Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Eliminate all ignition sources if safe to do so. No smoking, sparks, flames or other sources of ignition near spillage. Approach the spillage from upwind. Under normal conditions of handling and storage, spillages from aerosol containers are unlikely. If aerosol cans are ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. Small Spillages: Wipe up with an absorbent cloth and dispose of waste safely. Large Spillages: Absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Reference to other sections

For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions

Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Avoid exposing aerosol containers to high temperatures or direct sunlight. The product is flammable. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid discharge to the aquatic environment. Do not reuse empty containers. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Spray will evaporate and cool rapidly and may cause frostbite or cold burns if in contact with skin. Avoid contact with eyes. Avoid inhalation of vapors and spray/mists.

Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

Conditions for safe storage, including any incompatibilities

Storage precautions

Store away from incompatible materials (see Section 10). Store in accordance with local regulations. Keep away from oxidizing materials, heat and flames. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Protect containers from damage. Protect from sunlight. Do not store near heat sources or expose to high temperatures. Do not expose to temperatures exceeding 50°C/122°F.

Storage class

Miscellaneous hazardous material storage.

Specific end uses(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

Comments

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Hydrogenated base oil

Long-term exposure limit (8-hour TWA): ACGIH 200 mg/m³
A3, Sk

Revision date: 4/4/2018

AMSOIL Engine Degreaser

Carbon dioxide

Long-term exposure limit (8-hour TWA): OSHA 5000 ppm 9000 mg/m³
Long-term exposure limit (8-hour TWA): ACGIH 5000 ppm 9000 mg/m³
Short-term exposure limit (15-minute): ACGIH 30000 ppm 54000 mg/m³

ACGIH = American Conference of Governmental Industrial Hygienists.
OSHA = Occupational Safety and Health Administration.
A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans.
Sk = Danger of cutaneous absorption.

Carbon dioxide (CAS: 124-38-9)

Immediate danger to life and health	40,000 ppm

Exposure controls

Appropriate engineering controls	Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimize worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with OSHA 1910.133 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.6), and any relevant provincial regulation relating to health and safety at work. Wear tight-fitting, chemical splash goggles or face shield.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.9), and be demonstrated to be impervious to the chemical and resist degradation.
Other skin and body protection	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
Hygiene measures	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Warn cleaning personnel of any hazardous properties of the product.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work.

Revision date: 4/4/2018

AMSOIL Engine Degreaser

Environmental exposure controls	Dangerous for the environment.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Aerosol.
Color	Clear.
Odor	Petroleum.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Initial boiling point and range	Not available.
Flash point	Not available.
Evaporation rate	Slower than ether.
Upper/lower flammability or explosive limits	Not available.
Other flammability	Level: 3 Aerosol.
Vapor pressure	Not available.
Vapor density	> Air
Relative density	Not available.
Solubility(ies)	Not known.
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not applicable.
Explosive properties	Not considered to be explosive.
Oxidizing properties	Does not meet the criteria for classification as oxidizing.
Other information	No information required.

10. Stability and reactivity

Reactivity	See the other subsections of this section for further details.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	The following materials may react strongly with the product: Oxidizing agents.
Conditions to avoid	Avoid exposing aerosol containers to high temperatures or direct sunlight. Pressurised container: may burst if heated

Revision date: 4/4/2018

AMSOIL Engine Degreaser

Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.
Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

Notes (oral LD_{50})	Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD_{50})	Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC_{50})	Based on available data the classification criteria are not met.

Skin corrosion/irritation

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

Serious eye damage/irritation

Serious eye damage/irritation	Eye Dam. 1 - H318 Causes serious eye damage.

Respiratory sensitization

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

Skin sensitization

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

Germ cell mutagenicity

Genotoxicity - in vitro	Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity	Based on available data the classification criteria are not met.
IARC carcinogenicity	None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity - development	Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure	Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard	Asp. Tox. 1 - H304 May be fatal if swallowed and enters airways. Pneumonia may be the result if vomited material containing solvents reaches the lungs.

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Revision date: 4/4/2018

AMSOIL Engine Degreaser

Inhalation	A single exposure may cause the following adverse effects: Headache. Nausea, vomiting. Central nervous system depression. Drowsiness, dizziness, disorientation, vertigo. Narcotic effect.
Ingestion	Due to the physical nature of this product, it is unlikely that ingestion will occur. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.
Skin Contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target Organs	Central nervous system

12. Ecological Information

Toxicity	Aquatic Chronic 2 - H411 Toxic to aquatic life with long lasting effects.

Persistence and degradability

Persistence and degradability	The degradability of the product is not known.

Bioaccumulative potential

Bio-Accumulative Potential	No data available on bioaccumulation.
Partition coefficient	Not available.

Mobility in soil

Mobility	The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces.

Other adverse effects

Other adverse effects	None known.

13. Disposal considerations

Waste treatment methods

General information	The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.
Disposal methods	Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information

UN Number

UN No. (TDG)	1950

Revision date: 4/4/2018

AMSOIL Engine Degreaser

UN No. (IMDG)	1950
UN No. (ICAO)	1950
UN No. (DOT)	UN1950

UN proper shipping name

Proper shipping name (TDG)	AEROSOLS
Proper shipping name (IMDG)	AEROSOLS
Proper shipping name (ICAO)	AEROSOLS
Proper shipping name (DOT)	AEROSOLS

Transport hazard class(es)

DOT hazard class	2.1
DOT hazard label	2.1
TDG class	2.1
TDG label(s)	2.1
IMDG Class	2.1
ICAO class/division	2.1

DOT transport labels

Transport labels

Packing group

TDG Packing Group	None
IMDG packing group	None
ICAO packing group	None
DOT packing group	None

Environmental hazards

Environmentally Hazardous Substance
No.

Special precautions for user

EmS	F-D, S-U
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

Revision date: 4/4/2018

AMSOIL Engine Degreaser

Regulatory References OSHA Hazard Communication Standard 29 CFR §1910.1200 Hazardous Products Regulation (SOR/2015-17) Transportation of Dangerous Goods Regulations -SOR/2015-100.

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
None of the ingredients are listed or exempt.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
None of the ingredients are listed or exempt.

SARA 313 Emission Reporting
None of the ingredients are listed or exempt.

CAA Accidental Release Prevention
None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories
None of the ingredients are listed or exempt.

OSHA Highly Hazardous Chemicals
None of the ingredients are listed or exempt.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-I)
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-II)
None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances
The following ingredients are listed or exempt:

Carbon dioxide

Massachusetts "Right To Know" List
The following ingredients are listed or exempt:

Carbon dioxide

Hydrogenated base oil

Rhode Island "Right To Know" List
The following ingredients are listed or exempt:

Carbon dioxide

Hydrogenated base oil

Minnesota "Right To Know" List
The following ingredients are listed or exempt:

Carbon dioxide

Revision date: 4/4/2018

AMSOIL Engine Degreaser

New Jersey "Right To Know" List
The following ingredients are listed or exempt:

Carbon dioxide

Hydrogenated base oil

Pennsylvania "Right To Know" List
The following ingredients are listed or exempt:

Carbon dioxide

Hydrogenated base oil

Inventories

Canada - DSL/NDSL
All the ingredients are listed or exempt.

US - TSCA
All the ingredients are listed or exempt.

US - TSCA 12(b) Export Notification
None of the ingredients are listed or exempt.

16. Other information

Abbreviations and acronyms used in the safety data sheet	C.A.S. = Chemical Abstracts Service; E.C. No = European Commission number; GHS = Globally Harmonised System; OSHA = Occupational Safety and Health Administration; WHMIS = Workplace Hazardous Materials Information System; DOT = Department of Transport; TDG = Transport of Dangerous Goods Regulations; IMDG = International Maritime Dangerous Goods; IATA = International Air Transport Association; SARA = Superfund Amendments and Reauthorization Act; CERCLA = Comprehensive Environmental; EPCRA = Emergency Planning and Community Right-to-Know Act; TSCA = Toxic Substances Control Act; LD/LC/EC = Lethal Dose,Lethal Concentration/Effect Concentration for 50% of population; NOEC = No Overall Effect Concentration; NOEL = No Overall Effect Level; REACH = Registration, Evaluation, Authorisation & Restriction of Chemicals; STOT-RE = Single Target Organ Toxicity - Repeat Exposure; STOT-SE= Specific Target Organ Toxicity - Single Exposure; PBT = Persistent, Bioaccumulative, Toxic; vPvB = Very Persistent, Very Bioaccumulative.
Classification abbreviations and acronyms	Aerosol = Aerosol Eye Dam. = Serious eye damage Skin Irrit. = Skin irritation STOT SE = Specific target organ toxicity-single exposure Aquatic Chronic = Hazardous to the aquatic environment (chronic)
Key literature references and sources for data	Source: European Chemicals Agency, http://echa.europa.eu/
Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Revision comments	This is the first issue.
Revision date	4/4/2018
SDS No.	7353

Revision date: 4/4/2018

AMSOIL Engine Degreaser

Hazard statements in full

H222 Extremely flammable aerosol.
H226 Flammable liquid and vapor.
H280 Contains gas under pressure; may explode if heated.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

SAFETY DATA SHEET

GASOLINE - ETHANOL

SDS Number: 000003000613

Version: 5.1 Revision Date: 2023/03/21 Print Date: 2023/03/22

SECTION 1. IDENTIFICATION

Product name	:	GASOLINE - ETHANOL
Product code	:	12023, 11582, 11013, 11008, 11006, 11005, 11004, 11003, 11002, 11001, 10471, 10470, 10461, 10448, 10447, 10446, 10443
Other means of identification	:	SuperClean, SuperClean 94 (Montreal), GASOHOL, Regular, Mid-Grade, Plus, WinterGas, RegularClean, PlusClean, marked or dyed gasoline Super, Premium (94 RO), E-10, Ultra 94, Ethanol blended gasoline, P10

Manufacturer or supplier's details

Company name of supplier Address	:	Petro-Canada 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; Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

Recommended use	:	Gasoline-Ethanol is used in spark ignition engines including motor vehicles, farm vehicles, inboard and outboard boat engines, small engines and recreational vehicles.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Flammable liquids	:	Category 1
Skin irritation	:	Category 2
Eye irritation	:	Category 2A
Germ cell mutagenicity	:	Category 1B
Carcinogenicity	:	Category 1A
Reproductive toxicity	:	Category 2
Specific target organ toxicity	:	Category 3 (Central nervous system)

SAFETY DATA SHEET

GASOLINE - ETHANOL

SDS Number: 000003000613

Version: 5.1 Revision Date: 2023/03/21 Print Date: 2023/03/22

- single exposure

Specific target organ toxicity - repeated exposure : Category 1 (Immune system)

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.
H319 Causes serious eye 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 (Immune system) 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.
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.

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.
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 + 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	70 - 97
toluene	toluene	108-88-3	0 - 40
ethanol	ethanol	64-17-5	3 - 10
benzene	benzene	71-43-2	0 - 1.5

SECTION 4. FIRST AID MEASURES

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

SAFETY DATA SHEET

GASOLINE - ETHANOL

SDS Number: 000003000613

Version: 5.1 Revision Date: 2023/03/21 Print Date: 2023/03/22

		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. 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.
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) Alcohol-resistant foam Water spray Water fog.
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 face-piece.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions. Mark the contaminated area with signs and prevent access to unauthorized personnel. Only qualified personnel equipped with suitable protective equipment may intervene.
Environmental precautions	:	Do not allow uncontrolled discharge of product into the environment.
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. Do not ingest. Avoid contact with skin, eyes and clothing. Use only with adequate ventilation. Keep away from heat and sources of ignition. Keep container closed when not in use. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Ensure all equipment is electrically grounded before beginning transfer operations.
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
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
ethanol	64-17-5	STEL	1,000 ppm	CA BC OEL
		STEV	1,000 ppm	CA QC OEL
		STEL	1,000 ppm	ACGIH
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	0.05 ppm	ACGIH
		STEL	2.5 ppm	ACGIH

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Use explosion-proof ventilation equipment.
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.
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.
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

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	:	Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded. Please follow all applicable local/national requirements when selecting protective measures for a specific workplace. Wear face-shield if splashing hazard is likely. Wear safety glasses with side shields to prevent eye contact.
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.
Color	:	Clear to slightly yellow, undyed liquid. May be dyed for taxation purposes.
Odor	:	Gasoline
Odor Threshold	:	No data available

SAFETY DATA SHEET

GASOLINE - ETHANOL

SDS Number: 000003000613

Version: 5.1 Revision Date: 2023/03/21 Print Date: 2023/03/22

pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	26 - 225 °C
Flash point	:	-43 °C Method: Cleveland open cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	not applicable Remarks: 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.
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	7.6 %(V)
Lower explosion limit / Lower flammability limit	:	1.4 %(V)
Vapor pressure	:	307 - 802 mmHg (15 °C)
Relative vapor density	:	3 Air = 1
Relative density	:	No data available
Density	:	0.7 - 0.78 kg/l (15 °C)
Solubility(ies)		
Water solubility	:	Hydrocarbon components slightly soluble in water., Ethanol is soluble in water.
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	0.6 cSt (40 °C)

SAFETY DATA SHEET

GASOLINE - ETHANOL

SDS Number: 000003000613

Version: 5.1 Revision Date: 2023/03/21 Print Date: 2023/03/22

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 alkalis.
Hazardous decomposition products	:	May release COx, NOx, aldehydes, ketones, phenols, polynuclear aromatic hydrocarbons, 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	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method Remarks: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Acute toxicity estimate: > 20 mg/L Exposure time: 4 h Test atmosphere: vapor Method: Calculation method Remarks: Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method Remarks: Based on available data, the classification criteria are not met.

Components:

Gasoline; Low boiling point naphtha -unspecified:

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

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

toluene:

Acute oral toxicity	:	LD50 (Rat): 5,580 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 20 mg/l Exposure time: 4 h Test atmosphere: vapor
Acute dermal toxicity	:	LD50 (Rabbit): 12,125 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

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

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious 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

May cause genetic defects.

Carcinogenicity

May cause cancer.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

STOT-single exposure

May cause drowsiness or dizziness.

Product:

Target Organs : Central nervous system

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Product:

Target Organs : Immune system

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

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	:	no

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	:	no

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
ethanol
benzene
xylene
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 / 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
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 : 2023/03/21

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

Revision date: 4/9/2018

SAFETY DATA SHEET

Heavy-Duty Synthetic Diesel Oil

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200 and WHMIS 2015, in compliance with the Hazardous Product Act (HPA, as amended) and the requirements of the Hazardous Product Regulations (HPR).

1. Identification

Product identifier

Product name Heavy-Duty Synthetic Diesel Oil

Product number ADO

Recommended use of the chemical and restrictions on use

Application Engine oil.

Uses advised against Avoid the formation of mists.

Details of the supplier of the safety data sheet

Supplier
AMSOIL INC.
Bordner, Ladner, Gervais
Scotia Plaza, 40 King St W
Toronto, ON, Canada M5H 3Y4
+1 416.367.6547

Manufacturer
AMSOIL INC.
One AMSOIL Center,
Superior, WI 54880, USA.
T: +1 715-392-7101
compliance@amsoil.com

Emergency telephone number

Emergency telephone
CHEMTREC: Within USA and Canada: 1-800-424-9300
Outside the USA and Canada: +1 703-741-5970
(collect calls accepted) 24/7

2. Hazard(s) identification

Classification of the substance or mixture

OSHA/WHMIS Regulatory Status This Product is not Hazardous under the OSHA Hazard Communication Standard and according to the hazard criteria of the Hazardous Product Regulations.

Physical hazards Not Classified

Health hazards Not Classified

Environmental hazards Not Classified

Label elements

Hazard statements NC Not Classified

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

Revision date: 4/9/2018

Heavy-Duty Synthetic Diesel Oil

Hydrogenated base oil CAS number: 64742-54-7	**40 - 55%**
Classification Asp. Tox. 1 - H304	
bis(Nonylphenyl)amine CAS number: 36878-20-3	**1 - <2.5%**
Classification Aquatic Chronic 4 - H413	
Zinc alkyldithiophosphate CAS number: 84605-29-8	**1 - <2.5%**
Classification Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Aquatic Chronic 2 - H411	

The full text for all hazard statements is displayed in Section 16.

Composition comments The exact percentage is withheld as a trade secret in accordance with 29 CFR 1910.1200.

4. First-aid measures

Description of first aid measures

General information Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

Ingestion Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

Skin Contact Rinse with water.

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.

Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

General information See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation Prolonged inhalation of high concentrations may damage respiratory system.

Ingestion Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.

Skin contact Prolonged contact may cause dryness of the skin.

Revision date: 4/9/2018

Heavy-Duty Synthetic Diesel Oil

Eye contact May cause temporary eye irritation.

Indication of immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically.

Specific treatments No special treatment required.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves, that provides a basic level of protection during chemical incidents is defined by the Canada Occupational Health and Safety Regulations, by provincial guidelines on occupational health and safety or by NFPA standards if applicable.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Use protective equipment appropriate for surrounding materials.

Environmental precautions

Environmental precautions Avoid discharge to the aquatic environment.

Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Reuse or recycle products wherever possible. Absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of contents/container in accordance with national regulations.

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Revision date: 4/9/2018

Heavy-Duty Synthetic Diesel Oil

Usage precautions	Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimize spills. Keep container tightly sealed when not in use. Avoid contact with used product. Do not reuse empty containers. Avoid the formation of mists.
Advice on general occupational hygiene	Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

Conditions for safe storage, including any incompatibilities

Storage precautions	Store away from incompatible materials (see Section 10). Keep container tightly closed, in a cool, well ventilated place. Protect containers from damage.
Storage class	Chemical storage.

Specific end uses(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

Comments	The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

2,6-Di-tert-butyl-p-cresol

Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m³ inhalable fraction and vapor
A4

ACGIH = American Conference of Governmental Industrial Hygienists.
A4 = Not Classifiable as a Human Carcinogen.

Exposure controls

Appropriate engineering controls	Provide adequate ventilation. Good general ventilation should be adequate to control worker exposure to airborne contaminants.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with OSHA 1910.133 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.6), and any relevant provincial regulation relating to health and safety at work. The following protection should be worn: Chemical splash goggles.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.9), and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
Other skin and body protection	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Revision date: 4/9/2018

Heavy-Duty Synthetic Diesel Oil

Hygiene measures	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Provide adequate ventilation. Large Spillages: If ventilation is inadequate, suitable respiratory protection must be worn.
Environmental exposure controls	Keep container tightly sealed when not in use.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Liquid.
Color	Brown.
Odor	Mild hydrocarbon.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Initial boiling point and range	Not available.
Flash point	226 °C Cleveland open cup. [ASTM D 92]
Evaporation rate	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	0.8514
Solubility(ies)	Not known.
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	90.2 cSt @ 40°C 15.2 cSt @ 100°C [ASTM D 445]
Explosive properties	Not considered to be explosive.
Oxidizing properties	Does not meet the criteria for classification as oxidizing.
Fire point	236 °C Cleveland open cup. [ASTM D 92]
Pour point	-42 °C [ASTM D 97]

10. Stability and reactivity

Revision date: 4/9/2018

Heavy-Duty Synthetic Diesel Oil

Reactivity	See the other subsections of this section for further details.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.
Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.
Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

11. Toxicological information

Information on toxicological effects

Toxicological effects	Not regarded as a health hazard under current legislation.

Acute toxicity - oral

Notes (oral LD_{50})	Based on available data the classification criteria are not met.
ATE oral (mg/kg)	78,247.26

Acute toxicity - dermal

Notes (dermal LD_{50})	Based on available data the classification criteria are not met.
ATE dermal (mg/kg)	234,741.78

Acute toxicity - inhalation

Notes (inhalation LC_{50})	Based on available data the classification criteria are not met.
ATE inhalation (vapours mg/l)	2,347.42

Skin corrosion/irritation

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

Serious eye damage/irritation

Serious eye damage/irritation	Based on available data the classification criteria are not met.

Respiratory sensitization

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

Skin sensitization

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

Germ cell mutagenicity

Genotoxicity - in vitro	Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity	Based on available data the classification criteria are not met.
IARC carcinogenicity	None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility	Based on available data the classification criteria are not met.

Revision date: 4/9/2018

Heavy-Duty Synthetic Diesel Oil

Reproductive toxicity - development	Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure	Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard	Based on available data the classification criteria are not met.

General information	No specific health hazards known. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion	Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin Contact	Prolonged contact may cause dryness of the skin.
Eye contact	May cause temporary eye irritation.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target Organs	No specific target organs known.
Medical considerations	Skin disorders and allergies.

Toxicological information on ingredients.

Hydrogenated base oil

Acute toxicity - oral

Notes (oral LD_{50})	LD_{50} >5000 mg/kg, Oral, Rat REACH dossier information.

Acute toxicity - dermal

Notes (dermal LD_{50})	LD_{50} >5000 mg/kg, Dermal, Rabbit REACH dossier information.

Acute toxicity - inhalation

Notes (inhalation LC_{50})	LC_{50} >5.53 mg/l, Inhalation, Rat REACH dossier information.

Skin corrosion/irritation

Animal data	Dose: 0.5ml, 24 hours, Rabbit Erythema/eschar score: No erythema (0). Edema score: No oedema (0). REACH dossier information.

Serious eye damage/irritation

Serious eye damage/irritation	Dose: 0.1ml, 72 hours, Rabbit REACH dossier information.

Skin sensitization

Skin sensitization	Buehler test - Guinea pig: Not sensitizing. REACH dossier information.

Germ cell mutagenicity

Genotoxicity - in vitro	Gene mutation: Negative. REACH dossier information.
Genotoxicity - in vivo	Chromosome aberration: Negative. REACH dossier information.

Reproductive toxicity

Revision date: 4/9/2018

Heavy-Duty Synthetic Diesel Oil

Reproductive toxicity - fertility	Screening - NOAEL > 1000 mg/kg/day, Oral, Rat P REACH dossier information.
Reproductive toxicity - development	Developmental toxicity: - LOAEL: 125 mg/kg/day, Dermal, Rat REACH dossier information.

12. Ecological Information

Ecotoxicity Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

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

Ecological information on ingredients.

Hydrogenated base oil

Acute aquatic toxicity

Acute toxicity - fish	LL_{50}, 96 hours: > 100 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EL_{50}, 48 hours: > 10000 mg/l, Daphnia magna
Acute toxicity - aquatic plants	NOEL, 72 hours: > 100 mg/l, Pseudokirchneriella subcapitata

Persistence and degradability

Persistence and degradability The degradability of the product is not known.

Ecological information on ingredients.

Hydrogenated base oil

Biodegradation	Water - Degradation 31: 28 days Inherently biodegradable.

Bioaccumulative potential

Bio-Accumulative Potential No data available on bioaccumulation.

Partition coefficient Not available.

Mobility in soil

Mobility No data available.

Other adverse effects

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

General information The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

Revision date: 4/9/2018

Heavy-Duty Synthetic Diesel Oil

Disposal methods Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.

14. Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT, TDG).

UN Number

Not applicable.

UN proper shipping name

Not applicable.

Transport hazard class(es)

Transport labels
No transport warning sign required.

Packing group

Not applicable.

Environmental hazards

Environmentally Hazardous Substance
No.

Special precautions for user

Not applicable.

DOT TIH Zone Not applicable.

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

15. Regulatory information

Regulatory References OSHA Hazard Communication Standard 29 CFR §1910.1200 Hazardous Products Regulation (SOR/2015-17) Transportation of Dangerous Goods Regulations -SOR/2015-100.

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
None of the ingredients are listed or exempt.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
None of the ingredients are listed or exempt.

SARA 313 Emission Reporting
The following ingredients are listed or exempt:

Revision date: 4/9/2018

Heavy-Duty Synthetic Diesel Oil

Zinc alkyldithiophosphate
1.0 %

CAA Accidental Release Prevention
None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories
None of the ingredients are listed or exempt.

OSHA Highly Hazardous Chemicals
None of the ingredients are listed or exempt.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-I)
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-II)
None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances
The following ingredients are listed or exempt:

2,6-Di-tert-butyl-p-cresol

Massachusetts "Right To Know" List
The following ingredients are listed or exempt:

2,6-Di-tert-butyl-p-cresol

Rhode Island "Right To Know" List
The following ingredients are listed or exempt:

2,6-Di-tert-butyl-p-cresol

Minnesota "Right To Know" List
The following ingredients are listed or exempt:

2,6-Di-tert-butyl-p-cresol

New Jersey "Right To Know" List
The following ingredients are listed or exempt:

2,6-Di-tert-butyl-p-cresol

Pennsylvania "Right To Know" List
The following ingredients are listed or exempt:

2,6-Di-tert-butyl-p-cresol

Inventories

Canada - DSL/NDSL
All the ingredients are listed or exempt.

US - TSCA
All the ingredients are listed or exempt.

Revision date: 4/9/2018

Heavy-Duty Synthetic Diesel Oil

US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

16. Other information

Abbreviations and acronyms used in the safety data sheet	C.A.S. = Chemical Abstracts Service; E.C. No = European Commission number; GHS = Globally Harmonised System; OSHA = Occupational Safety and Health Administration; WHMIS = Workplace Hazardous Materials Information System; DOT = Department of Transport; TDG = Transport of Dangerous Goods Regulations; IMDG = International Maritime Dangerous Goods; IATA = International Air Transport Association; SARA = Superfund Amendments and Reauthorization Act; CERCLA = Comprehensive Environmental; EPCRA = Emergency Planning and Community Right-to-Know Act; TSCA = Toxic Substances Control Act; LD/LC/EC = Lethal Dose,Lethal Concentration/Effect Concentration for 50% of population; NOEC = No Overall Effect Concentration; NOEL = No Overall Effect Level; REACH = Registration, Evaluation, Authorisation & Restriction of Chemicals; STOT-RE = Single Target Organ Toxicity - Repeat Exposure; STOT-SE= Specific Target Organ Toxicity - Single Exposure; PBT = Persistent, Bioaccumulative, Toxic; vPvB = Very Persistent, Very Bioaccumulative.
Key literature references and sources for data	Source: European Chemicals Agency, http://echa.europa.eu/
Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Revision comments	This is the first issue.
Revision date	4/9/2018
SDS No.	7383
Hazard statements in full	H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H318 Causes serious eye damage. H411 Toxic to aquatic life with long lasting effects. H413 May cause long lasting harmful effects to aquatic life.

SAFETY DATA SHEET

PROPANE (NON-ODORIZED)

000003000268

Version 4.0 | Revision Date 2020/12/11 | Print Date 2020/12/11

SECTION 1. IDENTIFICATION

Product name	:	PROPANE (NON-ODORIZED)
Synonyms	:	Propane HD-5, Propane commercial, Liquified Petroleum Gas (LPG), C3H8, CGSB Propane Grade 1, CGSB Propane Grade 2, non-odorized propane, unstenched propane, automotive propane.
Product code	:	103152, 103148, 103175, 103173, 103171, 103169, 103155, 103146, 100588, 101781
Manufacturer or supplier's details		Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary Alberta T2P 3E3 Canada
Emergency telephone number		CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887; Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

Recommended use	:	Propane is used as a fuel gas, refrigerant and as a raw material for organic synthesis. It is also used as a laboratory gas. The grade determines the propane content. It is supplied as pressurized liquid in tanks.
Prepared by	:	Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Gas at room temperature; liquid when stored under pressure., compressed liquefied gas
Colour	colourless
Odour	Propane is an odourless gas.

GHS Classification

Flammable gases	:	Category 1
Gases under pressure	:	Liquefied gas
Simple Asphyxiant	:	Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

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

Precautionary statements : **Prevention:**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Response:
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
In case of leakage, eliminate all ignition sources.
Storage:
Protect from sunlight. Store in a well-ventilated place.

Potential Health Effects

Primary Routes of Entry : Eye contact
Inhalation
Skin contact

Aggravated Medical Condition : None known.

Other hazards

None known.

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

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

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
propane	74-98-6	72 - 100 %
propene	115-07-1	0 - 23.8 %
butane	106-97-8	0 - 4.7 %
ethane	74-84-0	0 - 4.6 %

SAFETY DATA SHEET

PROPANE (NON-ODORIZED)

000003000268

Version 4.0 Revision Date 2020/12/11 Print Date 2020/12/11

isobutane	75-28-5	0 - 3.6 %
isopentane	78-78-4	0 - 1 %
pentane	109-66-0	0 - 0.9 %
but-1-ene	106-98-9	0 - 0.5 %
methane	74-82-8	0 - 0.2 %

All above concentrations are percent by volume.

SECTION 4. FIRST AID MEASURES

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

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

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

If swallowed : Not a significant route of exposure.

Most important symptoms and effects, both acute and delayed : Inhalation may cause central nervous system effects.
Inhalation of vapours may cause drowsiness, headache, dizziness and disorientation.
May cause irritation of respiratory tract.
Contact with rapidly expanding gas may cause burns or frostbite.
Overexposure may lead to cardiac sensitization.
High concentrations can remove oxygen and cause dizziness or suffocation.

Notes to physician : Treat symptomatically.
Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : No information available.

Specific hazards during firefighting : If the product release cannot be shut off safely, allow the product to burn itself out.
Cool closed containers exposed to fire with water spray.

Hazardous combustion products : Carbon oxides (CO, CO2), smoke and irritating vapours as products of incomplete combustion.

Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for firefighters : Wear self-contained breathing apparatus and full protective wear.

Wear a positive-pressure supplied-air respirator with full face-piece.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. In case of inadequate ventilation wear respiratory protection. Remove all sources of ignition.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Ensure adequate ventilation. Use explosion-proof ventilation equipment. Non-sparking tools should be used. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin, eyes and clothing. Avoid breathing gas. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Use only with adequate ventilation. Keep away from heat and sources of ignition. Keep container closed when not in use. Do not use sparking tools. Do not enter areas where used or stored until adequately ventilated. SPECIAL PRECAUTIONS: Sludges and tank scale from petroleum storage tanks, trucks, rail cars, and filters/screens may contain naturally occurring radioactive material ("NORM") in the dominant form of radon 226. Similarily, equipment used for the transfer of petroleum product such as pipelines, pumps and compressors, may have detectable levels of radioactive radon on inner surfaces. Workers involved in cleaning, descaling, repair or other maintenance on inner surfaces of such equipment should avoid breathing and ingesting of dust generated from such activities. Suitable codes of practice should be developed for these activities, detailing appropriate occupational hygiene, personal protective equipment and disposal practices.
Conditions for safe storage	:	Store in original container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in a dry, cool and well-ventilated place.

Keep in properly labelled containers.
To maintain product quality, do not store in heat or direct sunlight.
Keep away from sources of ignition - No smoking.
Ensure the storage containers are grounded/bonded.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
propane	74-98-6	TWA	1,000 ppm	CA AB OEL
		TWAEV	1,000 ppm 1,800 mg/m3	CA QC OEL
propene	115-07-1	TWA	500 ppm 860 mg/m3	CA AB OEL
		TWA	500 ppm	CA BC OEL
		TWA	500 ppm	ACGIH
butane	106-97-8	TWA	1,000 ppm	CA AB OEL
		TWAEV	800 ppm 1,900 mg/m3	CA QC OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
ethane	74-84-0	TWA	1,000 ppm	CA AB OEL
isobutane	75-28-5	TWA	1,000 ppm	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
isopentane	78-78-4	TWA	600 ppm 1,770 mg/m3	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		TWA	1,000 ppm	ACGIH

Engineering measures : Use only in well-ventilated areas.
Use explosion-proof ventilation equipment.
Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.

Personal protective equipment

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : Always wear NIOSH-approved self-contained breathing apparatus when handling this material.

Hand protection

Material : Wear insulated gloves to prevent frostbite.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Gas at room temperature; liquid when stored under pressure., compressed liquefied gas
Colour	:	colourless
Odour	:	Propane is an odourless gas.
Odour Threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Boiling point/boiling range	:	-42 °C (-44 °F)
Decomposition temperature		No data available
Flash point	:	-104 °C (-155 °F) Method: closed cup
Auto-Ignition Temperature	:	450 °C (842 °F)
Evaporation rate	:	No data available
Flammability	:	Extremely flammable in presence of open flames, sparks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces.
Upper explosion limit	:	9.5 %(V)
Lower explosion limit	:	2.1 %(V)
Vapour pressure	:	10,763 mmHg (20 °C / 68 °F)
Relative vapour density	:	1.56

Relative density	:	No data available
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerisation does not occur.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Reactive with oxidising agents and halogenated compounds.
Hazardous decomposition products	:	May release COx, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Eye contact
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity	:	Remarks: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Remarks: Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	Remarks: Based on available data, the classification criteria are not met.

Components:

butane:

Acute inhalation toxicity	:	LC50 (Rat): 658 mg/l Exposure time: 4 h Test atmosphere: gas

isobutane:

Acute inhalation toxicity	:	LC50 (Rat): 658,000 mg/m3 Exposure time: 4 h

Test atmosphere: gas

isopentane:
Acute inhalation toxicity : LC50 (Rat): 280 mg/l
Exposure time: 4 h
Test atmosphere: vapour

pentane:
Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): 364 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Skin corrosion/irritation

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

Serious eye damage/eye irritation

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

Respiratory or skin sensitisation

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

Germ cell mutagenicity

Product:

Germ cell mutagenicity- Assessment	Based on available data, the classification criteria are not met.

Carcinogenicity

Product:

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

Reproductive toxicity

Product:

Reproductive toxicity - Assessment	Based on available data, the classification criteria are not met.

STOT - single exposure

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

STOT - repeated exposure

Product:

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

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

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

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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

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 1978
Proper shipping name	:	Propane
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	Class 2 - Gases: Flammable (Division 2.1)
Packing instruction (cargo aircraft)	:	200

IMDG-Code

UN number	:	UN 1978
Proper shipping name	:	PROPANE
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1
EmS Code	:	F-D, S-U
Marine pollutant	:	no

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

National Regulations

TDG

UN number	:	UN 1978
Proper shipping name	:	PROPANE
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1
ERG Code	:	115
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

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

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

DSL	On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

For Copy of SDS	:	Internet: www.petro-canada.ca/msds Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

SAFETY DATA SHEET

PROPANE (NON-ODORIZED)

000003000268

Version 4.0 Revision Date 2020/12/11 Print Date 2020/12/11

For Product Safety Information: 1 905-804-4752

Prepared by	:	Product Safety: +1 905-804-4752
Revision Date	:	2020/12/11

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

SAFETY DATA SHEET

PROPANE

000003000646

Version 4.0 | Revision Date 2020/12/11 | Print Date 2020/12/12

SECTION 1. IDENTIFICATION

Product name	:	PROPANE
Synonyms	:	Propane HD-5, Propane commercial, Liquified Petroleum Gas (LPG), C3H8, CGSB Propane Grade 1, CGSB Propane Grade 2, odorized propane, stenched propane, automotive propane, ER62.
Product code	:	103176, 103174, 103172, 103153, 103151, 103150, 103149, 103159, 103156, 103147, 100589, 100139
Manufacturer or supplier's details		Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary Alberta T2P 3E3 Canada
Emergency telephone number		CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887; Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

Recommended use	:	Propane is used as a fuel gas, refrigerant and as a raw material for organic synthesis. It is also used as a laboratory gas. The grade determines the propane content. It is supplied as pressurized liquid in tanks.
Prepared by	:	Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Gas at room temperature; liquid when stored under pressure., compressed liquefied gas
Colour	colourless
Odour	Propane is an odourless gas. Odourized propane will contain up to 30 g Ethyl Mercaptan per 1000 L of propane.

GHS Classification

Flammable gases	:	Category 1
Gases under pressure	:	Liquefied gas
Simple Asphyxiant	:	Category 1

GHS label elements

SAFETY DATA SHEET

PROPANE

000003000646

Version 4.0 Revision Date 2020/12/11 Print Date 2020/12/12

Hazard pictograms :

Signal word : Danger

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

Precautionary statements : **Prevention:**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Response:
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
In case of leakage, eliminate all ignition sources.
Storage:
Protect from sunlight. Store in a well-ventilated place.

Potential Health Effects

Primary Routes of Entry : Eye contact
Inhalation
Skin contact

Aggravated Medical Condition : None known.

Other hazards

None known.

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

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

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
propane	74-98-6	72 - 100 %
propene	115-07-1	0 - 23.8 %
butane	106-97-8	0 - 4.7 %

ethane	74-84-0	0 - 4.6 %
isobutane	75-28-5	0 - 3.6 %
isopentane	78-78-4	0 - 1 %
pentane	109-66-0	0 - 0.9 %
but-1-ene	106-98-9	0 - 0.5 %
methane	74-82-8	0 - 0.2 %

All above concentrations are percent by volume.

SECTION 4. FIRST AID MEASURES

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

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

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

If swallowed : Not a significant route of exposure.

Most important symptoms and effects, both acute and delayed : Inhalation may cause central nervous system effects.
Inhalation of vapours may cause drowsiness, headache, dizziness and disorientation.
May cause irritation of respiratory tract.
Contact with rapidly expanding gas may cause burns or frostbite.
Overexposure may lead to cardiac sensitization.
High concentrations can remove oxygen and cause dizziness or suffocation.

Notes to physician : Treat symptomatically.
Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : No information available.

Specific hazards during firefighting : If the product release cannot be shut off safely, allow the product to burn itself out.

Cool closed containers exposed to fire with water spray.

Hazardous combustion products	:	Carbon oxides (CO, CO2), smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus and full protective wear. Wear a positive-pressure supplied-air respirator with full 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. In case of inadequate ventilation wear respiratory protection. Remove all sources of ignition.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Ensure adequate ventilation. Use explosion-proof ventilation equipment. Non-sparking tools should be used. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

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

To maintain product quality, do not store in heat or direct sunlight.
Keep away from sources of ignition - No smoking.
Ensure the storage containers are grounded/bonded.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
propane	74-98-6	TWA	1,000 ppm	CA AB OEL
		TWAEV	1,000 ppm 1,800 mg/m3	CA QC OEL
propene	115-07-1	TWA	500 ppm 860 mg/m3	CA AB OEL
		TWA	500 ppm	CA BC OEL
		TWA	500 ppm	ACGIH
butane	106-97-8	TWA	1,000 ppm	CA AB OEL
		TWAEV	800 ppm 1,900 mg/m3	CA QC OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
ethane	74-84-0	TWA	1,000 ppm	CA AB OEL
isobutane	75-28-5	TWA	1,000 ppm	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
isopentane	78-78-4	TWA	600 ppm 1,770 mg/m3	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		TWA	1,000 ppm	ACGIH
ethanethiol	75-08-1	TWA	0.5 ppm 1.3 mg/m3	CA AB OEL
		TWA	0.5 ppm	CA BC OEL
		TWAEV	0.5 ppm 1.3 mg/m3	CA QC OEL
		TWA	0.5 ppm	ACGIH

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Use explosion-proof ventilation equipment.

Personal protective equipment

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : Always wear NIOSH-approved self-contained breathing apparatus when handling this material.

Hand protection

Material	:	Wear insulated gloves to prevent frostbite. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
Remarks	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	:	Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use. Wear suitable protective equipment.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Gas at room temperature; liquid when stored under pressure., compressed liquefied gas
Colour	:	colourless
Odour	:	Propane is an odourless gas. Odourized propane will contain up to 30 g Ethyl Mercaptan per 1000 L of propane.
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	-42 °C (-44 °F)
Decomposition temperature		No data available
Flash point	:	-104 °C (-155 °F) Method: closed cup
Auto-Ignition Temperature	:	450 °C (842 °F)

Evaporation rate	:	No data available
Flammability	:	Extremely flammable in presence of open flames, sparks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces.
Upper explosion limit	:	9.5 %(V)
Lower explosion limit	:	2.1 %(V)
Vapour pressure	:	10,763 mmHg (38 °C / 100 °F)
Relative vapour density	:	1.56
Relative density	:	No data available
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerisation does not occur.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Reactive with oxidising agents and halogenated compounds.
Hazardous decomposition products	:	May release COx, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Eye contact
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity : Remarks: Based on available data, the classification criteria are not met.

Acute inhalation toxicity : Remarks: Based on available data, the classification criteria are not met.

Acute dermal toxicity : Remarks: Based on available data, the classification criteria are not met.

Components:

butane:

Acute inhalation toxicity : LC50 (Rat): 658 mg/l
Exposure time: 4 h
Test atmosphere: gas

isobutane:

Acute inhalation toxicity : LC50 (Rat): 658,000 mg/m3
Exposure time: 4 h
Test atmosphere: gas

isopentane:

Acute inhalation toxicity : LC50 (Rat): 280 mg/l
Exposure time: 4 h
Test atmosphere: vapour

pentane:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): 364 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Skin corrosion/irritation

Product:

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

Serious eye damage/eye irritation

Product:

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

Respiratory or skin sensitisation

Product:

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

Germ cell mutagenicity

Product:

Germ cell mutagenicity-Assessment	Based on available data, the classification criteria are not met.

Carcinogenicity

Product:

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

Reproductive toxicity

Product:

Reproductive toxicity - Assessment	Based on available data, the classification criteria are not met.

STOT - single exposure

Product:

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

STOT - repeated exposure

Product:

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

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : Remarks: No data available

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

Toxicity to algae : Remarks: No data available

Toxicity to bacteria : Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labelled prior to recycling or disposal. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
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 1978
Proper shipping name	:	Propane
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	Class 2 - Gases: Flammable (Division 2.1)
Packing instruction (cargo aircraft)	:	200

IMDG-Code

UN number	:	UN 1978
Proper shipping name	:	PROPANE
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1
EmS Code	:	F-D, S-U
Marine pollutant	:	no

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

National Regulations

SAFETY DATA SHEET

PROPANE

000003000646

Version 4.0 Revision Date 2020/12/11 Print Date 2020/12/12

TDG

UN number	:	UN 1978
Proper shipping name	:	PROPANE
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1
ERG Code	:	115
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

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

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

DSL On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

For Copy of SDS	:	Internet: www.petro-canada.ca/msds Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228 For Product Safety Information: 1 905-804-4752
Prepared by	:	Product Safety: +1 905-804-4752
Revision Date	:	2020/12/11

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

SAFETY DATA SHEET

US OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR)

Issuing Date 04-Oct-2022 **Revision Date** 04-Oct-2022 **Revision Number** 1

1. Identification

Product identifier

Product Name AMSOIL Semi- Synthetic Bar & Chain Oil

Other means of identification

Product Code(s) ABC

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Lubricating Oil

Restrictions on use Avoid formation of mists

Details of the supplier of the safety data sheet

Initial supplier identifier
AMSOIL INC.
Bay Adelaide Centre, East Tower
22 Adelaide St. W
Toronto, ON, Canada M5H 4E3
T:+1 877-822-5172

Manufacturer Address
AMSOIL INC.
One AMSOIL Center
Superior, WI 54880, USA
T: +1 715-392-7101

E-mail compliance@amsoil.com

Emergency telephone number

Emergency telephone CHEMTREC: Within USA and Canada: 1-800-424-9300
Outside the USA and Canada: +1 703-741-5970
(collect calls accepted) 24/7

2. Hazard(s) identification

Classification

This product is not considered hazardous by either the US 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) or the Canadian Workplace Hazardous Material Information System (WHMIS 2015)

Label elements

Hazard statements
Not classified.

Other information

No information available.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	4259-15-8	0.1-1	-	-

*The exact percentage (concentration) of composition has been withheld as a trade secret.

Chemical Additions
The classification as a carcinogen does not apply as it can be shown that the substance(s) contain(s) less than 3% DMSO extract as measured by IP 346.

4. First-aid measures

Description of first aid measures

General advice Get medical attention immediately if symptoms occur. Show this safety data sheet to the doctor in attendance.

Inhalation Remove person to fresh air and keep comfortable for breathing.

Eye contact Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Skin contact Wash skin with soap and water. Take off contaminated clothing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms May cause temporary eye irritation. May cause gastrointestinal discomfort if consumed in large amounts. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization in susceptible persons. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Containers can burst or explode when heated, due to excessive pressure build-up. Thermal decomposition can lead to release of irritating gases and vapors.
Hazardous combustion products	Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
Explosion data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.
Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Use personal protective equipment as required. See section 8 for more information. Ensure adequate ventilation.
For emergency responders	Use personal protection recommended in Section 8.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Clean contaminated surface thoroughly. After cleaning, flush away traces with water. Prevent product from entering drains.
Reference to other sections	For additional information see: Section 8: Exposure controls/personal protection; Section 12: Ecological information; Section 13: Disposal considerations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with used product. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Do not reuse empty containers. Store away from incompatible materials. See section 10 for more information. Protect from physical damage.

8. Exposure controls/personal protection

Control parameters

Exposure Limits	Under conditions which may generate mists, the following exposure limits are recommended: Long-term exposure limit (8-hour TWA): 5 mg/m³. Short-term exposure limit (15-minute): 10 mg/m³.
Biological occupational exposure limits	This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls	Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection	If there is a risk of contact:. Wear safety glasses with side shields (or goggles).
Hand protection	If there is a risk of contact: Wear suitable gloves. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.
Skin and body protection	If there is a risk of contact:. Wear suitable protective clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Environmental exposure controls	Avoid release to the environment.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	
Physical state	Liquid
Color	Amber
Odor	Mild hydrocarbon
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH		No data available
Melting point / freezing point		No data available
Initial boiling point and boiling range		No data available
Flash point	220 °C / 428 °F	Cleveland Open Cup ASTM D 92
Evaporation rate		No data available
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	0.8794	No data available
Water solubility		No data available
Solubility(ies)		No data available
Partition coefficient		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available
Kinematic viscosity	94.25 cSt at 40 ºC 11.91 cSt at 100 ºC	ASTM D445
Dynamic viscosity		No data available

Other information

Explosive properties	No information available.

Oxidizing properties	No information available.
Softening point	No information available
Pour Point	-33ºC [ASTM D 97]
Fire Point	234ºC (COC) [ASTM D 92]
Molecular weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity None under normal use conditions.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid None known based on information supplied.

Incompatible materials None known based on information supplied.

Hazardous decomposition products Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

11. Toxicological information

Information on likely routes of exposure

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms May cause temporary eye irritation. May cause gastrointestinal discomfort if consumed in large amounts. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization in susceptible persons. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing.

Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	= 3100 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity The supplier declares that it can be shown that the substance(s) contain less than 3% DMSO extract as measured by IP 346.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard Due to the viscosity, this product does not present an aspiration hazard.

12. Ecological information

Ecotoxicity Not considered to be harmful to aquatic life. Large or frequent spills may have hazardous effects on the environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) 4259-15-8	EC50: 1.0 - 5.0mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 10.0 - 35.0mg/L (96h, Pimephales promelas) LC50: 1.0 - 5.0mg/L (96h, Pimephales promelas)	-	EC50: 1 - 1.5mg/L (48h, Daphnia magna)

Persistence and degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) 4259-15-8	3.59

Mobility in soil No information available.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations, Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

California waste information This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. Transport information

DOT Not regulated

TDG Not regulated

IATA Not regulated

IMDG Not regulated

15. Regulatory information

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

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories
Contact supplier for inventory compliance status
*Contact supplier for details. One or more substances in this product are either not listed on the US TSCA inventory, listed on the confidential US TSCA inventory or are otherwise exempted from inventory listing requirements

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) - 4259-15-8	1.0

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) 4259-15-8	-	X	-	-

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
Ethylbenzene - 100-41-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) 4259-15-8	X	-	X
Zinc bis(dinonylnaphthalenesulphonate) 28016-00-4	X	-	X
Hydrogenated base oil 64742-70-7	-	X	-
Xylene 1330-20-7	X	X	X
Ethylbenzene 100-41-4	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

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Revision Note Initial Release.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information

relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

US OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR)

Issuing Date 20-Jan-2022 **Revision Date** 20-Jan-2022 **Revision Number** 1

1. Identification

Product identifier

Product Name Synthetic ATV/UTV Engine Oil, 10W-40

Other means of identification

Product Code(s) AUV40

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Lubricating Oil

Restrictions on use Avoid formation of mists

Details of the supplier of the safety data sheet

Initial supplier identifier
AMSOIL INC.
Bay Adelaide Centre, East Tower
22 Adelaide St. W
Toronto, ON, Canada M5H 4E3
T:+1 877-822-5172

Manufacturer Address
AMSOIL INC.
One AMSOIL Center
Superior, WI 54880, USA
T: +1 715-392-7101

E-mail compliance@amsoil.com

Emergency telephone number

Emergency telephone CHEMTREC: Within USA and Canada: 1-800-424-9300
Outside the USA and Canada: +1 703-741-5970
(collect calls accepted) 24/7

2. Hazard(s) identification

Classification

This product is not considered hazardous by either the US 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) or the Canadian Workplace Hazardous Material Information System (WHMIS 2015)

Label elements

Hazard statements
Not classified.

Other information

May be harmful in contact with skin.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Based on tests performed on the final product, the product is classified as non-hazardous.

Chemical name	CAS No	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	68457-79-4	0.1-1	-	-

*The exact percentage (concentration) of composition has been withheld as a trade secret.

Chemical Additions
The classification as a carcinogen does not apply as it can be shown that the substance(s) contain(s) less than 3% DMSO extract as measured by IP 346.

4. First-aid measures

Description of first aid measures

General advice Get medical attention immediately if symptoms occur. Show this safety data sheet to the doctor in attendance.

Inhalation Remove person to fresh air and keep comfortable for breathing.

Eye contact Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Skin contact Wash skin with soap and water. Take off contaminated clothing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms May cause temporary eye irritation. May cause gastrointestinal discomfort if consumed in large amounts. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization in susceptible persons. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical Containers can burst or explode when heated, due to excessive pressure build-up. Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous combustion products Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. See section 8 for more information. Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

Reference to other sections For additional information see: Section 8: Exposure controls/personal protection; Section 12: Ecological information; Section 13: Disposal considerations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with used product. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Do not reuse empty containers. Store away from incompatible materials. See section 10 for more information. Protect from physical damage.

8. Exposure controls/personal protection

Control parameters

Exposure Limits Under conditions which may generate mists, the following exposure limits are recommended: Long-term exposure limit (8-hour TWA): 5 mg/m³. Short-term exposure limit (15-minute): 10 mg/m³.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection If there is a risk of contact:. Wear safety glasses with side shields (or goggles).

Hand protection If there is a risk of contact:. Wear suitable gloves. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection If there is a risk of contact:. Wear suitable protective clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Environmental exposure controls Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	
Physical state	Liquid
Color	Amber
Odor	Mild hydrocarbon
Odor threshold	No information available

Property	Values	Remarks • Method
pH		No data available
Melting point / freezing point		No data available
Initial boiling point and boiling range		No data available
Flash point	242 °C / 467.6 °F	Cleveland Open Cup ASTM D 92
Evaporation rate		No data available
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	0.8607	No data available
Water solubility		No data available
Solubility(ies)		No data available
Partition coefficient		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available

Kinematic viscosity	88.3 cSt at 40 ºC 14.1 cSt at 100 ºC	ASTM D445
Dynamic viscosity		No data available

Other information

Explosive properties	No information available.
Oxidizing properties	No information available.
Softening point	No information available
Pour Point	-40ºC [ASTM D 97]
Fire Point	267ºC (COC) [ASTM D 92]
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity None under normal use conditions.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid None known based on information supplied.

Incompatible materials None known based on information supplied.

Hazardous decomposition products Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

11. Toxicological information

Information on likely routes of exposure

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact May be harmful in contact with skin.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms May cause temporary eye irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization in susceptible persons. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document:

ATEmix (oral)	6,593.70 mg/kg
ATEmix (dermal)	2,637.50 mg/kg

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Phosphorodithioic acid, mixed	= 3600 mg/kg (Rat)	> 20000 mg/kg (Rabbit)	-

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
O,O-bis(iso-Bu and pentyl) esters, zinc salts			

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Component Information	
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts (68457-79-4)	
Method	OECD Test No. 405: Acute Eye Irritation/Corrosion
Species	Rabbit
Exposure route	Eye
Effective dose	0.1 mL
Results	Eye Damage

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity The supplier declares that it can be shown that the substance(s) contain less than 3% DMSO extract as measured by IP 346.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard Due to the viscosity, this product does not present an aspiration hazard.

12. Ecological information

Ecotoxicity Not considered to be harmful to aquatic life. Large or frequent spills may have hazardous effects on the environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts 68457-79-4	EC50: 1.0 - 5.0mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 25 - 50mg/L (96h, Pimephales promelas) LC50: >100mg/L (96h, Pimephales promelas)	-	EC50: 4.0 - 6.0mg/L (48h, Daphnia magna)

Persistence and degradability No information available.

Bioaccumulation No information available.

Mobility in soil No information available.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations, Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
California waste information	This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. Transport information

DOT	Not regulated
TDG	Not regulated
IATA	Not regulated
IMDG	Not regulated

15. Regulatory information

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

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

Contact supplier for inventory compliance status

Chemical name	CAS No	US TSCA Inventory listing	US TSCA inactive/active designation
Hydrogenated base oil	72623-87-1	Present	Active
2-ethyl-2-[[(1-oxononyl)oxy]methyl]propane-1,3-diyl dinonan-1-oate	126-57-8	Present	Active
Hydrogenated base oil	64742-65-0	Present	Active
Hydrogenated base oil(s)	-		
non hazardous ingredient	-		
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	68649-42-3	Present	Active
bis(nonylphenyl)amine	36878-20-3	Present	Active
Benzene, diethenyl-, polymer with 2-methyl-1,3-butadiene, hydrogenated	127883-08-3	Present	Active
4,4'-Methylene bis(dibutyldithiocarbamate)	10254-57-6	Present	Active
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	68457-79-4	Present	Active
Hydrogenated base oil	64742-54-7	Present	Active
Non-hazardous ingredients	-		
Hydrogenated base oil	8042-47-5	Present	Active
Hydrogenated base oil	72623-86-0	Present	Active
Hydrogenated base oil	64742-70-7	Present	Active
Hydrogenated base oil	64742-56-9	Present	Active

*Contact supplier for details. One or more substances in this product are either not listed on the US TSCA inventory, listed on the confidential US TSCA inventory or are otherwise exempted from inventory listing requirements

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts - 68457-79-4	1.0

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts 68457-79-4	-	X	-	-

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts 68649-42-3	X	-	X
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts 68457-79-4	X	-	X
Hydrogenated base oil 64742-70-7	-	X	-
Hydrogenated base oil 64742-56-9	-	X	-

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

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End of Safety Data Sheet