

# Material Safety Data Sheet

SUPREME™ 5W-20, 5W-30, 10W-30, 10W-40, 20W-50 MOTOR OIL



## 1. Product and company identification

<b>Product name</b>	: SUPREME™ 5W-20, 5W-30, 10W-30, 10W-40, 20W-50 MOTOR OIL
<b>Code</b>	: MOSP52, 410-348; MOSP53, 410-344; MOSP13, 410-341; MOSP14, 410-342; MOSP25, 410-343
<b>Material uses</b>	: Supreme motor oils are for use in all engines fuelled with gasoline, gasoline-ethanol blends up to E85, propane or CNG where the manufacturer recommends the use of API SN or SM quality oils. SAE 5W-20, 5W-30 and 10W-30 grades also meet the requirements of ILSAC GF-5 and GF-4.
<b>Manufacturer</b>	: Petro-Canada Lubricants Inc. 2310 Lakeshore Road West Mississauga, Ontario Canada L5J 1K2
<b><u>In case of emergency</u></b>	: Suncor Energy: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

## 2. Hazards identification

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

See toxicological information (Section 11)

### 3 . Composition/information on ingredients

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

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

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

### 4 . First-aid measures

<b>Eye contact</b>	: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
<b>Skin contact</b>	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
<b>Inhalation</b>	: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
<b>Ingestion</b>	: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
<b>Protection of first-aiders</b>	: 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.
<b>Notes to physician</b>	: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

### 5 . Fire-fighting measures

<b>Flammability of the product</b>	: May be combustible at high temperature.
<b><u>Extinguishing media</u></b>	
<b>Suitable</b>	: Use an extinguishing agent suitable for the surrounding fire.
<b>Not suitable</b>	: None known.
<b>Special exposure hazards</b>	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
<b>Products of combustion</b>	: Carbon oxides (CO, CO <sub>2</sub> ), smoke and irritating vapours as products of incomplete combustion.
<b>Special protective equipment for fire-fighters</b>	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
<b>Special remarks on fire hazards</b>	: Low fire hazard. This material must be heated before ignition will occur.
<b>Special remarks on explosion hazards</b>	: Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

### 6 . Accidental release measures

<b>Personal precautions</b>	: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
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## 6 . Accidental release measures

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

### Methods for cleaning up

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

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

## 7 . Handling and storage

**Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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

## 8 . Exposure controls/personal protection

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

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

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

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

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

### Personal protection

**Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapour filter

## 8 . Exposure controls/personal protection

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

## 9 . Physical and chemical properties

- Physical state** : Viscous liquid.
- Flash point** : Closed cup:  $\geq 204^{\circ}\text{C}$  ( $\geq 399.2^{\circ}\text{F}$ ) [Pensky-Martens.]  
Open cup:  $\geq 219^{\circ}\text{C}$  ( $\geq 426.2^{\circ}\text{F}$ ) [Cleveland.]
- Auto-ignition temperature** : Not available.
- Flammable limits** : Not available.
- Colour** : Light amber.
- Odour** : Mild petroleum oil like.
- Odour threshold** : Not available.
- pH** : Not available.
- Boiling/condensation point** : Not available.
- Melting/freezing point** : Not available.
- Relative density** : 0.855 to 0.876 kg/L @  $15^{\circ}\text{C}$  ( $59^{\circ}\text{F}$ )
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Volatility** : Not available.
- Evaporation rate** : Not available.
- Viscosity** : **5W-20**: 47.3 cSt @  $40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ), 8.4 cSt @  $100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ ), VI=153;  
**5W-30**: 62.3 cSt @  $40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ), 10.7 cSt @  $100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ ), VI=163;  
**10W-30**: 67.7 cSt @  $40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ), 10.4 cSt @  $100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ ), VI=141;  
**10W-40**: 105.4 cSt @  $40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ), 15.4 cSt @  $100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ ), VI=154;  
**20W-50**: 159.1 cSt @  $40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ), 17.88 cSt @  $100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ ), VI=124
- Pour point** : **5W-20**:  $-48^{\circ}\text{C}$  ( $-54^{\circ}\text{F}$ ); **5W-30**:  $-42^{\circ}\text{C}$  ( $-44^{\circ}\text{F}$ ); **10W-30**:  $-45^{\circ}\text{C}$  ( $-49^{\circ}\text{F}$ ); **10W-40**:  $-42^{\circ}\text{C}$  ( $-44^{\circ}\text{F}$ ); **20W-50**:  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ )
- Solubility** : Insoluble in water.

## 10 . Stability and reactivity

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

## 11 . Toxicological information

### Acute toxicity

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

**Conclusion/Summary** : Not available.

### Chronic toxicity

**Conclusion/Summary** : Not available.

### Irritation/Corrosion

**Conclusion/Summary** : Not available.

### Sensitiser

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Classification

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

### Mutagenicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

## 12 . Ecological information

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

### Aquatic ecotoxicity

**Conclusion/Summary** : Not available.

### Biodegradability

**Conclusion/Summary** : Not available.

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

## 13 . Disposal considerations

**Waste disposal** : The generation of waste should be avoided or minimised wherever possible. 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

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

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

## 14 . Transport information

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

PG\* : Packing group

## 15 . Regulatory information

### United States

HCS Classification : Not regulated.

### Canada

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

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

### International regulations

Canada inventory : All components are listed or exempted.

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

Europe inventory : At least one component is not listed in EINECS but all such components are listed in ELINCS.  
Please contact your supplier for information on the inventory status of this material.

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

## 16 . Other information

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

Health	1
Flammability	1
Physical hazards	0
Personal protection	B

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



### References

: Available upon request.  
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Date of previous issue : 1/14/2010.

Responsible name : Product Safety - RS

Indicates information that has changed from previously issued version.

## 16 . Other information

### **For Copy of (M)SDS**

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

Internet: [lubricants.petro-canada.ca/msds](http://lubricants.petro-canada.ca/msds)

Lubricants:

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

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

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

For Product Safety Information: (905) 804-4752

### **Notice to reader**

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

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



# Material Safety Data Sheet

DURON™ 15W-40 HEAVY DUTY ENGINE OIL



## 1. Product and company identification

<b>Product name</b>	: DURON™ 15W-40 HEAVY DUTY ENGINE OIL
<b>Code</b>	: DUR15, 420-053
<b>Material uses</b>	: DURON 15W-40 engine oil may be used in a wide range of compression and spark ignition engines in mobile and stationary equipment where this viscosity grade is recommended. The product may also be used in many types of wet clutch transmissions and hydraulic systems.
<b>Manufacturer</b>	: Petro-Canada Lubricants Inc. 2310 Lakeshore Road West Mississauga, Ontario Canada L5J 1K2
<b><u>In case of emergency</u></b>	: Suncor Energy: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

## 2. Hazards identification

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

See toxicological information (section 11)

## 3. Composition/information on ingredients

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

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



### 3 . Composition/information on ingredients

The base oil may be a mixture of the following CAS#s: 8042-47-5, 64741-95-3, 64742-01-4, 64742-46-7, 64742-47-8, 64742-53-6, 64742-54-7, 64742-55-8, 64742-62-7, 72623-83-7, 72623-84-8, 72623-85-9, 72623-86-0, 72623-87-1, 178603-64-0, 178603-65-1, 178603-66-2, 445411-73-4

### 4 . First aid measures

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

### 5 . Fire-fighting measures

- Flammability of the product** : May be combustible at high temperature.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Products of combustion** : Carbon oxides (CO, CO<sub>2</sub>), sulphur oxides (SO<sub>x</sub>), calcium oxides (CaO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), smoke and irritating vapours as products of incomplete combustion.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Low fire hazard. This material must be heated before ignition will occur.
- Special remarks on explosion hazards** : Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

### 6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## 6 . Accidental release measures

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

## 7 . Handling and storage

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

## 8 . Exposure controls/personal protection

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

### Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal protection

- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapor filter
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.  
Recommended: neoprene, nitrile, polyvinyl alcohol (PVA), Viton.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

## 8 . Exposure controls/personal protection

- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9 . Physical and chemical properties

- Physical state** : Viscous liquid.
- Flash point** : Open cup: 227°C (440.6°F) [Cleveland.]
- Auto-ignition temperature** : Fire Point: 247°C (476.6°F)
- Flammable limits** : Not available.
- Color** : Light amber.
- Odor** : Mild petroleum oil like.
- Odor threshold** : Not available.
- pH** : Not available.
- Boiling/condensation point** : Not available.
- Melting/freezing point** : Not available.
- Relative density** : 0.8756 kg/L @ 15°C (59°F)
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Volatility** : Not available.
- Evaporation rate** : Not available.
- Viscosity** : 117 cSt @ 40°C (104°F), 15.4 cSt @ 100°C (212°F), VI=139
- Pour point** : -45°C (-49°F)
- Solubility** : Insoluble in water.

## 10 . Stability and reactivity

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

## 11 . Toxicological information

### Acute toxicity

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

**Conclusion/Summary** : Not available.

### Chronic toxicity

**Conclusion/Summary** : Not available.

### Irritation/Corrosion

**Conclusion/Summary** : Not available.

### Sensitizer

## 11 . Toxicological information

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Classification

#### **Product/ingredient name**

Mixture of severely hydrotreated and hydrocracked base oil (petroleum).

ACGIH

A4

IARC

-

EPA

-

NIOSH

-

NTP

-

OSHA

-

### Mutagenicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

## 12 . Ecological information

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

### Aquatic ecotoxicity

**Conclusion/Summary** : Not available.

### Biodegradability

**Conclusion/Summary** : Not available.

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

## 13 . Disposal considerations

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

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

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

## 14 . Transport information

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

PG\* : Packing group

## 15 . Regulatory information

### United States

**HCS Classification** : Not regulated.

### Canada

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

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

### EU regulations

**Risk phrases** : This product is not classified according to EU legislation.

### International regulations

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

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

**Europe inventory** : At least one component is not listed in EINECS but all such components are listed in ELINCS.  
Please contact your supplier for information on the inventory status of this material.

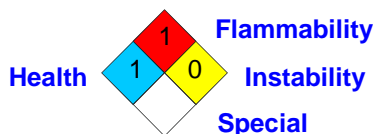
**International lists** : **China inventory (IECSC)**: All components are listed or exempted.

## 16 . Other information

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

Health	1
Flammability	1
Physical hazards	0
Personal protection	B

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



### References

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

**Date of printing** : 10/8/2010.

**Date of issue** : 8 October 2010

**Date of previous issue** : 2/18/2010.

**Responsible name** : Product Safety - DSR

Indicates information that has changed from previously issued version.

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

Telephone: 1-800-268-5850; Fax: 1-800-201-6285

For Product Safety Information: (905) 804-4752

### Notice to reader

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

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

## MATERIAL SAFETY DATA SHEET - BATTERY ACID

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### Section I - Product Identification

**Product identifier:** Battery Acid

**Product use:** Lead/Acid Battery

**Chemical family:** Mineral acids.

**Supplier's name and address:**

Surette Battery Co. Ltd.  
P.O. Box 2020, 1 Station Road  
Springhill, N.S.  
B0M 1X0 (902) 597-3767

**Manufacturer's name and address:**

Refer to Supplier

**Emergency Telephone #:** CANUTEC (613) 996-6666

**WHMIS CLASS:** D1B, E

**HMIS rating:** Health 3 Fire 0 Reactivity 1

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### Section II - Hazardous Ingredients

<u>Ingredients</u>	<u>LC<sub>50</sub>, ppm</u>	<u>LD<sub>50</sub>, mg/kg</u>	<u>wt. %</u>	<u>(Rat, ihl.)</u>	<u>(Rat, oral)</u>
	<u>CAS #</u>				
Sulfuric acid	7664-93-9	35-40	510 mg/m <sup>3</sup>	/2Hr	2140

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### Section III - Physical Data

**Physical state, odour and appearance:** Clear, colourless, liquid that is odourless unless heated, then odour becomes sharp and choking.

**Odour threshold:** n/av

**Specific gravity (at °C):** 1.265

**Coefficient of water/oil distribution:** n/av

**Vapour pressure:** n/av

**Boiling point:** 110 °C

**Melting/freezing point:** 0.7 °C **pH:** <1

**Vapour density (Air=1.0):** Low

**Evaporation rate (n-BuAc=1.0):** n/av

**Volatiles, %:** n/av

**Solubility in water (w/w):** 100%



## Section IV - Fire and Explosion Data

**Conditions of flammability:** Non-flammable liquid.

**Means of extinction:** Use media appropriate for surrounding fire.

**Sensitivity to mechanical impact/static discharge:** Not susceptible to mechanical impact or static discharge.

**Flash point (Method):** None. **Lower/upper flammable limits (% by volume):** n/ap

**Auto-ignition temperature:** n/ap

**Hazardous combustion products:** Refer to "Hazardous decomposition products" (next section)

**Unusual fire and explosion hazards:** Sulfur dioxide, sulfur trioxide, sulfuric acid fumes. Evolution of explosive Hydrogen gas on contact with most metals.

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## Section V - Reactivity Data

**Stability:** Stable. Hazardous polymerization will not occur.

**Incompatible materials:** Highly reactive with materials such as metals, metal oxides, hydroxides, nitrates, amines, carbohydrates and other alkaline materials. Reactions can generate a great deal of heat as does the dilution of acid with water. Never add water to acid. Acid should always be added slowly to the water.

**Conditions of reactivity:** Product may decompose if exposed to high temperatures.

**Hazardous decomposition products:** If heated above 340°C, sulfuric acid will decompose to sulfur trioxide and water.

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## Section VI - Toxicological Properties

### \*\*\*Routes of exposure and acute/chronic effects\*\*\*

**Exposure limits:** ACGIH-TLV 1 mg/m<sup>3</sup> or 0.25 ppm expressed as mist or spray.

**Inhalation:** Mists and vapours are corrosive and can cause severe irritation or damage to the mouth, nose, throat and lungs. Exposure levels can affect symptoms from mild coughing, sneezing, tickling sensation in the nose and throat to bronchitis and pulmonary edema.

**Skin contact:** Corrosive - causes burns, and destruction of all tissues. Severity of the burns is generally determined by the concentration of the solution and duration of exposure.

**Eye contact:** Contact with even small amounts can cause severe damage (corneal) burns and/or necrosis which may result in loss of sight.

**Ingestion:** Harmful or fatal if swallowed. Causes burns to the GI system.

**Chronic effects:** None known.

*Carcinogenicity:* Not listed by IARC or ACGIH.

*Teratogenicity, mutagenicity, other reproductive effects:* None known.

**Sensitization to material:** Product is not known to cause allergies.

**Synergistic materials:** None known.

## Section VII - First Aid

**Inhalation:** Remove victim to fresh air. If breathing difficulty does not improve rapidly, get patient to a doctor.

**Skin:** Wash skin with mild soap and water. Rinse thoroughly. See a doctor if irritation persists.

**Eyes:** Flush with plenty of water for at least 20 minutes. Get medical attention immediately.

**Ingestion:** Get immediate medical attention. Do not induce vomiting.

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## Section VIII - Preventative Measures

**Spill, leak or release:** Use full protective clothing, including boots and protective equipment. Contain spill in order to prevent contamination of sewage system or waterway. Pump into mark containers for reclamation or disposal. If possible, neutralize on a dry basis with suitable alkali such as lime, soda ash, or sodium bicarbonate, then flush with water in accordance with applicable regulations.

**Waste disposal:** Consult federal, provincial and local regulations for allowed means of disposal.

### \*\*\*PROTECTIVE EQUIPMENT\*\*\*

**Respiratory protection:** Cartridge type mask or self-contained breathing apparatus approved by NIOSH, depending on exposure.

**Engineering controls:** Local exhaust is required. Mechanical ventilation (general) - not compulsory.

**Protective gloves:** PVC or Neoprene.

**Eye protection:** Chemical splash goggles or face shield.

**Other protective equipment:** Depending on exposure and on workplace standards. Safety showers and eye wash station should be installed in storage and handling areas.

### \*\*\*STORAGE AND HANDLING\*\*\*

**Handling procedures and equipment:** Avoid contact with skin, eyes and clothing. Protect containers from physical damage. Wear protective equipment during handling. When diluting, slowly add acid to water (never water to acid) while stirring to avoid spattering or boiling. Wash thoroughly after handling. Emptied containers retain vapour and product residue.

**Storage requirements:** Store in a cool, dry area. Store away from sources of ignition. Keep container closed and protect from contact with water to avoid possible violent reaction.

**Special shipping instructions:** Special shipping instructions: TDG - Battery fluid, acid, Class 8(9.2), UN2794, P.G. III

## Section IX - Preparation Information

**Prepared by:** Surrette Battery Co. Ltd.

**Telephone #:** (902) 597-3767

**Preparation date:** 21-January-2010

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### **Additional notes or references:**

Abbreviations:

ACGIH: American Conference of Governmental Industrial Hygienists

IARC: International Agency for Research on Cancer

n/ap not applicable

n/av: not available

NIOSH: National Institute for Occupational Safety and Health

TCC: Tagliabue Closed Cup

WHMIS: Workplace Hazardous Materials Information System

TDG: Transportation of Dangerous Goods Act and Regulations

TLV: Threshold Limit Values

TWA: Time Weighted Average

References:

1. Van Nostrand Reinhold, Dangerous Properties of Industrial Materials, Seventh Edition, N. Irving Sax.
2. Canadian Centre for Occupational Health and Safety. RTECS (Registry of Toxic Effects) and CHEMINFO databases.
3. ACGIH, Threshold Limit Values and Biological Exposure Indices for 1997
4. International Agency for Research on Cancer Monographs, Supplement 7, 1988.

# Material Safety Data Sheet



DIESEL FUEL



## 1 . Product and company identification

<b>Product name</b>	: DIESEL FUEL
<b>Synonym</b>	: Seasonal Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, D50, D60, P40, P50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend, B1, B2, B5, Diesel Low Cloud (LC).
<b>Code</b>	: W104, W293; SAP: 120, 121, 122, 125, 126, 129, 130, 135, 287, 288
<b>Material uses</b>	: Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining Diesel has a higher flash point requirement, for safe use in underground mines.
<b>Manufacturer</b>	: PETRO-CANADA P.O. Box 2844 150 – 6th Avenue South-West Calgary, Alberta T2P 3E3
<b><u>In case of emergency</u></b>	: Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

## 2 . Hazards identification

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

## 2 . Hazards identification

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

See toxicological information (section 11)

## 3 . Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Kerosine (petroleum), hydrodesulfurized / Fuels, diesel / Fuel Oil No. 2	64742-81-0 / 68334-30-5 / 68476-30-2	95 - 100
Fatty acids methyl esters	61788-61-2 / 67784-80-9 / 73891-99-3	0 - 5

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

## 4 . First-aid measures

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

## 5 . Fire-fighting measures

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

## 5 . Fire-fighting measures

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

## 6 . Accidental release measures

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

## 7 . Handling and storage

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



## 8 . Exposure controls/personal protection

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

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

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

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

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

### Personal protection

#### Respiratory

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

#### Hands

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

#### Eyes

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

#### Skin

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

#### Environmental exposure controls

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

## 9 . Physical and chemical properties

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

## 10 . Stability and reactivity

<b>Chemical stability</b>	: The product is stable.
<b>Hazardous polymerisation</b>	: Under normal conditions of storage and use, hazardous polymerisation will not occur.
<b>Materials to avoid</b>	: Reactive with oxidising agents and acids.
<b>Hazardous decomposition products</b>	: May release COx, NOx, SOx, H2S, smoke and irritating vapours when heated to decomposition.

## 11 . Toxicological information

### Acute toxicity

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

**Conclusion/Summary** : Not available.

### Chronic toxicity

**Conclusion/Summary** : Not available.

### Irritation/Corrosion

**Conclusion/Summary** : Not available.

### Sensitiser

**Conclusion/Summary** : Not available.

### Carcinogenicity

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

## 11 . Toxicological information

### Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Kerosine (petroleum), hydrodesulfurized	A3	-	-	-	-	-
Fuels, diesel	A3	3	-	-	-	-
Fuel oil No. 2	A3	3	-	-	-	-

### Mutagenicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

## 12 . Ecological information

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

### Aquatic ecotoxicity

**Conclusion/Summary** : Not available.

### Biodegradability

**Conclusion/Summary** : Not available.


## 13 . Disposal considerations

**Waste disposal** : The generation of waste should be avoided or minimised wherever possible. 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

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

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

## 14 . Transport information

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

PG\* : Packing group

## 15 . Regulatory information

### United States

**HCS Classification** : Combustible liquid  
Irritating material

### Canada

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

## 15 . Regulatory information

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

### International regulations

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

## 16 . Other information

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

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

Health	2
Flammability	2
Physical hazards	0
Personal protection	H

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



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

**Date of printing** : 7/6/2010.

**Date of issue** : 6 July 2010

**Date of previous issue** : 7/3/2009.

**Responsible name** : Product Safety - JDW

Indicates information that has changed from previously issued version.

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

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

For Product Safety Information: (905) 804-4752

### Notice to reader

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

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

# Material Safety Data Sheet



## 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Page: 1

24-Hour Emergency Phone Number: 989-636-4400

Product: DOWFROST\* HD HEAT TRANSFER FLUID, DYED

Product Code: 04632

Effective Date: 08/03/04

Date Printed: 08/04/04

MSD: 002239

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Propylene glycol	CAS# 000057-55-6	94%
Dipotassium phosphate	CAS# 007758-11-4	<5%
Deionized water	CAS# 007732-18-5	<5%

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

\*\*\*\*\*  
\* Clear yellow liquid. Odorless. Avoid temperatures above 450F, \*  
\* 232C. \*  
\* \*  
\*\*\*\*\*

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause slight transient (temporary) eye irritation.  
Corneal injury is unlikely. Mists may cause eye irritation.

SKIN CONTACT: Prolonged contact is essentially nonirritating to skin. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Repeated exposures may cause flaking and softening of skin.

INGESTION: Single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.

INHALATION: At room temperature, vapors are minimal due to physical properties. Mists may cause irritation of upper respiratory tract (nose and throat).

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\* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY

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SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Repeated excessive exposure to propylene glycol may cause central nervous system effects.

CANCER INFORMATION: Did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely.  
Exposures having no adverse effects on the mother should have no effect on the fetus.

REPRODUCTIVE EFFECTS: In animal studies, has been shown not to interfere with reproduction.

#### 4. FIRST AID

EYES: Flush eyes with plenty of water.

SKIN: Wash off in flowing water or shower.

INGESTION: No adverse effects anticipated by this route of exposure incidental to proper industrial handling.

INHALATION: Remove to fresh air if effects occur. Consult a physician.

NOTE TO PHYSICIAN: No specific antidote. Supportive care.  
Treatment based on judgment of the physician in response to reactions of the patient.

#### 5. FIRE FIGHTING MEASURES

##### FLAMMABLE PROPERTIES

FLASH POINT: 214 F, 107 C (based on a similar material)

METHOD USED: PMCC

AUTOIGNITION TEMPERATURE: Not determined

##### FLAMMABILITY LIMITS

LFL: Not determined

UFL: Not determined

HAZARDOUS COMBUSTION PRODUCTS: During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to carbon monoxide and carbon dioxide.

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OTHER FLAMMABILITY INFORMATION: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Flammable concentrations of vapor can accumulate at temperatures above 214F. Liquid mist of this product can burn. Spills of these organic liquids on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. Container may rupture from gas generation in a fire situation.

EXTINGUISHING MEDIA: Water fog or fine spray, carbon dioxide, dry chemical, foam. Alcohol resistant foams (ATC type) are preferred if available. General purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively. Do not use direct water stream. May spread fire.

MEDIA TO BE AVOIDED: Do not use direct water stream.

FIRE FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider use of unmanned hose holder or monitor nozzles. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Immediately withdraw all personnel from area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

#### 6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

PROTECT PEOPLE: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls/Personal Protection.

PROTECT THE ENVIRONMENT: Avoid contamination of all waterways.

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CLEAN-UP: See Section 13, Disposal Considerations.

## 7. HANDLING AND STORAGE

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: No special handling requirements data available.

HANDLING: See Section 8, Exposure Controls/Personal Protection.

STORAGE: See Section 10, Stability and Reactivity.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

### PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION: Use safety glasses. Safety glasses should be sufficient for most operations; however, for misty operations wear chemical goggles.

SKIN PROTECTION: Use gloves impervious to this material.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In misty atmospheres, use an approved mist respirator.

EXPOSURE GUIDELINES: Propylene glycol: AIHA WEEL is 10 mg/m<sup>3</sup> for total vapor and aerosol.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: Clear yellow liquid

ODOR: Odorless

VAPOR PRESSURE: 0.22 mmHg @ 20 C

VAPOR DENSITY: 2.6

BOILING POINT: 320 F, 160 C

SOLUBILITY IN WATER/MISCIBILITY: Complete

SPECIFIC GRAVITY OR DENSITY: 1.058 @ 25/25 C

## 10. STABILITY AND REACTIVITY

(Continued on page 5)

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CHEMICAL STABILITY: Thermally stable at typical use temperatures.

CONDITIONS TO AVOID: Avoid use temperatures above 450F, 232C.  
Product can degrade at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with oxidizing materials. Avoid contact with strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition products depend upon temperature, air supply and the presence of other materials.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION (See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)

SKIN: The LD50 for skin absorption in rabbits is >10,000 mg/kg.

INGESTION: The oral LD50 for rats is 20,000 - 34,000 mg/kg.

MUTAGENICITY: In vitro mutagenicity studies were negative.  
Animal mutagenicity studies were negative.

12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: Based largely or completely on data for major component(s). Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

DEGRADATION & PERSISTENCE: Based largely or completely on data for major component(s). Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Degradation is expected in the atmospheric environment within minutes to hours.

ECOTOXICITY: Based largely or completely on data for major component(s). Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in most

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sensitive species).

### 13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information On Ingredients).

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator or other thermal destruction device.

As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Center at 800-258-2436 or 989-832-1556 for further details.

### 14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (D.O.T.): For D.O.T. regulatory information, if required, consult transportation regulations, product shipping papers, or contact your Dow representative.

CANADIAN TDG INFORMATION: For TDG regulatory information, if required, consult transportation regulations, product shipping papers, or your Dow representative.

### 15. REGULATORY INFORMATION (Not meant to be all-inclusive--selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following

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specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

## U.S. REGULATIONS

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SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

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SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Not to have met any hazard category

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## TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

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STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
1,2-PROPANEDIOL	000057-55-6	PA1

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

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## OSHA HAZARD COMMUNICATION STANDARD:

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REGULATORY INFORMATION (CONTINUED)

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CANADIAN REGULATIONS

=====

WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

This product is not a "Controlled Product" under WHMIS.

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CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):

This product contains one or more substances which are not listed on the Canadian Domestic Substances List (DSL). Contact your Dow representative for more information.

16. OTHER INFORMATION

MSDS STATUS: Revised Section 8 (Exposure Guidelines).

\* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY  
The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult The Dow Chemical Company For Further Information.



# Material Safety Data Sheet



PETRO-CANADA ANTIFREEZE



## 1. Product and company identification

<b>Product name</b>	: PETRO-CANADA ANTIFREEZE
<b>Synonym</b>	: Universal Antifreeze, Radiator Antifreeze, Diesel Antifreeze, Petro-Canada Antifreeze-Coolant, Petro-Canada Heavy Duty Antifreeze-Coolant, Pre-Mix Antifreeze, Petro-Canada Premium Radiator Antifreeze, Diesel Engine Coolant, Pre-Mixed Radiator Antifreeze/Coolant Petro-Canada.
<b>Code</b>	: W269
<b>Material uses</b>	: Used as an engine antifreeze coolant.
<b>Manufacturer</b>	: PETRO-CANADA P.O. Box 2844 150 – 6th Avenue South-West Calgary, Alberta T2P 3E3
<b><u>In case of emergency</u></b>	: Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

## 2. Hazards identification

<b>Physical state</b>	: Clear viscous liquid.
<b>Odour</b>	: Odourless.
<b>WHMIS (Canada)</b>	:   Class D-1B: Material causing immediate and serious toxic effects (Toxic). Class D-2A: Material causing other toxic effects (Very toxic).
<b>OSHA/HCS status</b>	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Emergency overview</b>	: CAUTION!  MAY BE HARMFUL IF SWALLOWED. MAY CAUSE EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA. POSSIBLE DEVELOPMENTAL HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE ADVERSE DEVELOPMENTAL EFFECTS, BASED ON ANIMAL DATA.  May be harmful if swallowed. Slightly irritating to the eyes and skin. Avoid exposure - obtain special instructions before use. Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Contains material that may cause target organ damage, based on animal data. Contains material which may cause birth defects, based on animal data. Contains material which may cause developmental abnormalities, based on animal data. Avoid exposure during pregnancy. Wash thoroughly after handling.
<b>Routes of entry</b>	: Dermal contact. Eye contact. Inhalation. Ingestion.
<b><u>Potential acute health effects</u></b>	
<b>Inhalation</b>	: Inhalation of this product may cause respiratory tract irritation.
<b>Ingestion</b>	: Harmful if swallowed. Ingestion of this product may cause gastro-intestinal irritation, nausea, vomiting, abdominal pain, and diarrhea. Ingestion of this product may cause Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.
<b>Skin</b>	: Slightly irritating to the skin.
<b>Eyes</b>	: Slightly irritating to the eyes.
<b><u>Potential chronic health effects</u></b>	

## 2. Hazards identification

<b>Chronic effects</b>	: Contains material that may cause target organ damage, based on animal data.
<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: Contains material which may cause birth defects, based on animal data.
<b>Developmental effects</b>	: Contains material which may cause developmental abnormalities, based on animal data.
<b>Fertility effects</b>	: No known significant effects or critical hazards.
<b>Target organs</b>	: The substance may be toxic to kidneys and liver. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
<b>Medical conditions aggravated by over-exposure</b>	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

## 3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Ethylene glycol	107-21-1	45 - 99

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

## 4. First-aid measures

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

## 5. Fire-fighting measures

<b>Flammability of the product</b>	: Non-flammable.
<b><u>Extinguishing media</u></b>	
<b>Suitable</b>	: Use an extinguishing agent suitable for the surrounding fire.
<b>Not suitable</b>	: None known.
<b>Special exposure hazards</b>	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

## 5 . Fire-fighting measures

- Products of combustion** : Carbon oxides (CO, CO<sub>2</sub>), smoke and irritating vapours as products of incomplete combustion.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on explosion hazards** : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

## 6 . Accidental release measures

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

## 7 . Handling and storage

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

## 8 . Exposure controls/personal protection

Ingredient	Exposure limits
Ethylene glycol	ACGIH TLV (United States). CEIL: 100 mg/m <sup>3</sup> , (aerosol)

Consult local authorities for acceptable exposure limits.

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

## 8 . Exposure controls/personal protection

- Engineering measures** : If user operations generate dust, fumes, gas, vapour 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.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Personal protection**
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapour filter
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: neoprene, nitrile, polyvinyl chloride (PVC). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9 . Physical and chemical properties

- Physical state** : Clear viscous liquid.
- Flash point** : Not available.
- Auto-ignition temperature** : Not available.
- Flammable limits** : Not available.
- Colour** : Yellow.
- Odour** : Odourless.
- Odour threshold** : Not available.
- pH** : Not available.
- Boiling/condensation point** : 129°C (264.2°F)
- Melting/freezing point** : -37°C (-34.6°F)
- Relative density** : 1.06 to 1.09
- Vapour pressure** : 0.008 kPa (0.06 mm Hg)
- Vapour density** : 2.1 [Air = 1]
- Volatility** : Not available.
- Evaporation rate** : Not available.
- Viscosity** : Not available.
- Pour point** : Not available.

## 9 . Physical and chemical properties

**Solubility** : Soluble in water, methanol and diethyl ether.

## 10 . Stability and reactivity

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

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

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

**Hazardous decomposition products** : May release CO<sub>x</sub>, smoke and irritating vapours when heated to decomposition.

## 11 . Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Ethylene glycol	LD50 Dermal	Rabbit	9530 mg/kg	-
	LD50 Oral	Rat	4700 mg/kg	-
	LC50 Inhalation	Rat	2725 mg/m <sup>3</sup>	4 hours
	Dusts and mists			

**Conclusion/Summary** : Not available.

### Chronic toxicity

**Conclusion/Summary** : Not available.

### Irritation/Corrosion

**Conclusion/Summary** : Not available.

### Sensitiser

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Ethylene glycol	A4	-	-	-	-	-

### Mutagenicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

## 12 . Ecological information

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

### Aquatic ecotoxicity

**Conclusion/Summary** : Not available.

### Biodegradability

**Conclusion/Summary** : Not available.


## 13 . Disposal considerations

**Waste disposal** : The generation of waste should be avoided or minimised 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

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

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

## 14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
<b>TDG Classification</b>	Not regulated.	-	-	-		-
<b>DOT Classification</b>	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Ethylene glycol based coolant)	9	III		<b>Special provisions</b> In single containers of 5000 lbs capacity or less this product is exempt from DOT regulations (not regulated).

PG\* : Packing group

## 15 . Regulatory information

### United States

**HCS Classification** : Target organ effects

### Canada

**WHMIS (Canada)** : Class D-1B: Material causing immediate and serious toxic effects (Toxic).  
Class D-2A: Material causing other toxic effects (Very toxic).

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

### International regulations

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

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

**Europe inventory** : Not determined.

## 16 . Other information

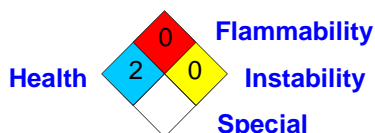
**Label requirements** : MAY BE HARMFUL IF SWALLOWED. MAY CAUSE EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA. POSSIBLE DEVELOPMENTAL HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE ADVERSE DEVELOPMENTAL EFFECTS, BASED ON ANIMAL DATA.

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

Health	*	2
Flammability		0
Physical hazards		0
Personal protection		H

## 16 . Other information

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



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

Date of printing : 9/14/2011.

Date of issue : 11 March 2010

Date of previous issue : No previous validation.

Responsible name : Product Safety - RS

Indicates information that has changed from previously issued version.

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

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

For Product Safety Information: (905) 804-4752

### Notice to reader

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

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



# Material Safety Data Sheet



GASOLINE, UNLEADED



## 1 . Product and company identification

<b>Product name</b>	: GASOLINE, UNLEADED
<b>Synonym</b>	: Regular, Unleaded Gasoline (US Grade), Mid-Grade, Plus, Super, WinterGas, SummerGas, Supreme, SuperClean WinterGas, RegularClean, PlusClean, Premium, marked or dyed gasoline, TQRUL, transitional quality regular unleaded, BOB, Blendstock for Oxygenate Blending
<b>Code</b>	: W102E, SAP: 102 to 117
<b>Material uses</b>	: Unleaded gasoline is used in spark ignition engines including motor vehicles, inboard and outboard boat engines, small engines such as chain saws and lawn mowers, and recreational vehicles.
<b>Manufacturer</b>	: PETRO-CANADA P.O. Box 2844 150 – 6th Avenue South-West Calgary, Alberta T2P 3E3
<b><u>In case of emergency</u></b>	: Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

## 2 . Hazards identification

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



## 2 . Hazards identification

<b>Skin</b>	: Irritating to skin.
<b>Eyes</b>	: Irritating to eyes.
<b><u>Potential chronic health effects</u></b>	
<b>Chronic effects</b>	: This product contains an ingredient or ingredients, which have been shown to cause chronic toxic effects. Repeated or prolonged exposure to the substance can produce blood disorders.
<b>Carcinogenicity</b>	: Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.
<b>Mutagenicity</b>	: Contains material which can cause heritable genetic effects.
<b>Teratogenicity</b>	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.
<b>Fertility effects</b>	: No known significant effects or critical hazards.
<b>Medical conditions aggravated by over-exposure</b>	: Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated skin exposure can produce local skin destruction or dermatitis.

See toxicological information (section 11)

## 3 . Composition/information on ingredients

<b><u>Name</u></b>	<b><u>CAS number</u></b>	<b><u>%</u></b>
Gasoline	86290-81-5	85-100
Ethanol	64-17-5	0.1-1
Benzene	71-43-2	0.5-1.5
Toluene	108-88-3	15-40*

\*Montreal: may vary from 3-40%

\*Edmonton: may vary from 1-5%

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

## 4 . First-aid measures

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

## 5 . Fire-fighting measures

<b>Flammability of the product</b>	: Flammable liquid (NFPA) .
<b>Extinguishing media</b>	
<b>Suitable</b>	: Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
<b>Not suitable</b>	: Do not use water jet.
<b>Special exposure hazards</b>	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
<b>Products of combustion</b>	: Carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), polynuclear aromatic hydrocarbons, phenols, aldehydes, ketones, smoke and irritating vapours as products of incomplete combustion.
<b>Special protective equipment for fire-fighters</b>	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
<b>Special remarks on fire hazards</b>	: Extremely flammable in presence of open flames, sparks, shocks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces.
<b>Special remarks on explosion hazards</b>	: Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire. Vapours may form explosive mixtures with air.

## 6 . Accidental release measures

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

## 7 . Handling and storage

<b>Handling</b>	: Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical
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## 7 . Handling and storage

(ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

### Storage

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

## 8 . Exposure controls/personal protection

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

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

### Recommended monitoring procedures

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

### Engineering measures

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

### Hygiene measures

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

### Personal protection

#### Respiratory

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

## 8 . Exposure controls/personal protection

- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.  
Recommended: polyvinyl alcohol (PVA), Viton. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9 . Physical and chemical properties

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

## 10 . Stability and reactivity

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

## 11 . Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Gasoline	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	13600 mg/kg	-
Ethanol	LD50 Dermal	Rabbit	>15800 mg/kg	-
	LD50 Oral	Mouse	3450 mg/kg	-
	LC50 Inhalation Vapour	Rat	8850 mg/m <sup>3</sup>	4 hours
Benzene	LD50 Dermal	Rabbit	>8240 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
	LC50 Inhalation Vapour	Rat	13228 ppm	4 hours
Toluene	LD50 Dermal	Rabbit	12125 mg/kg	-
	LD50 Oral	Rat	636 mg/kg	-
	LC50 Inhalation Vapour	Rat	7585 ppm	4 hours

**Conclusion/Summary** : Not available.

### Chronic toxicity

**Conclusion/Summary** : Not available.

### Irritation/Corrosion

**Conclusion/Summary** : Not available.

### Sensitiser

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Gasoline	A3	2B	-	-	-	-
Ethanol	A3	-	-	-	-	-
Benzene	A1	1	A	+	Proven.	+
Toluene	A4	3	D	-	-	-

### Mutagenicity

**Conclusion/Summary** : Not available.

### Teratogenicity

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

### Reproductive toxicity

**Conclusion/Summary** : Not available.

## 12 . Ecological information

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

### Aquatic ecotoxicity

**Conclusion/Summary** : Not available.

### Biodegradability

**Conclusion/Summary** : Not available.


## 13 . Disposal considerations

**Waste disposal** : The generation of waste should be avoided or minimised wherever possible. 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

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

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

## 14 . Transport information

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

PG\* : Packing group

## 15 . Regulatory information

### United States

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

### Canada

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

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

### International regulations

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

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

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

## 16 . Other information

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

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

Health	*	2
Flammability		3
Physical hazards		0
Personal protection		H

## 16 . Other information

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



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

Date of printing : 4/21/2010.

Date of issue : 9 April 2010

Date of previous issue : No previous validation.

Responsible name : Product Safety - RS

Indicates information that has changed from previously issued version.

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

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

For Product Safety Information: (905) 804-4752

### Notice to reader

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

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



# Material Safety Data Sheet

ENVIRON™ AW 32, 46, 68



## 1. Product and company identification

<b>Product name</b>	: ENVIRON™ AW 32, 46, 68
<b>Code</b>	: ENVAW32, 490-130; ENVAW46, 490-131; ENVAW68, 490-132
<b>Material uses</b>	: ENVIRON AW ashless hydraulic oils are designed for use in mobile and stationary hydraulic equipment using vane-, piston- and gear-type pumps. The ashless, or zinc-free, additive system used in ENVIRON AW oils makes them especially suitable for use in environmentally sensitive areas. They are well suited for high pressure applications such as found in axial piston pumps.
<b>Manufacturer</b>	: Petro-Canada Lubricants Inc. 2310 Lakeshore Road West Mississauga, Ontario Canada L5J 1K2
<b><u>In case of emergency</u></b>	: Suncor Energy: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

## 2. Hazards identification

<b>Physical state</b>	: Viscous liquid.
<b>Odour</b>	: Mild petroleum oil like.
<b>WHMIS (Canada)</b>	: Not controlled under WHMIS (Canada).
<b>OSHA/HCS status</b>	: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
<b>Emergency overview</b>	: No specific hazard.
<b>Routes of entry</b>	: Dermal contact. Eye contact. Inhalation. Ingestion.
<b><u>Potential acute health effects</u></b>	
<b>Inhalation</b>	: No known significant effects or critical hazards.
<b>Ingestion</b>	: No known significant effects or critical hazards.
<b>Skin</b>	: Slightly irritating to the skin.
<b>Eyes</b>	: Slightly irritating to the eyes.
<b><u>Potential chronic health effects</u></b>	
<b>Chronic effects</b>	: No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: Not listed as carcinogenic by OSHA, NTP or IARC.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.
<b>Fertility effects</b>	: No known significant effects or critical hazards.
<b>Medical conditions aggravated by over-exposure</b>	: Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated skin exposure can produce local skin destruction or dermatitis.
<b>See toxicological information (Section 11)</b>	



### 3 . Composition/information on ingredients

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

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

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

### 4 . First-aid measures

<b>Eye contact</b>	: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
<b>Skin contact</b>	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
<b>Inhalation</b>	: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
<b>Ingestion</b>	: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
<b>Protection of first-aiders</b>	: 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.
<b>Notes to physician</b>	: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

### 5 . Fire-fighting measures

<b>Flammability of the product</b>	: May be combustible at high temperature.
<b><u>Extinguishing media</u></b>	
<b>Suitable</b>	: Use an extinguishing agent suitable for the surrounding fire.
<b>Not suitable</b>	: None known.
<b>Special exposure hazards</b>	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
<b>Products of combustion</b>	: Carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), sulphur oxides (SO <sub>x</sub> ), sulphur compounds (H <sub>2</sub> S), silicon oxides (SiO <sub>x</sub> ), phosphorus oxides (PO <sub>x</sub> ), diphenylamine, alkenes, aldehydes, smoke and irritating vapours as products of incomplete combustion.
<b>Special protective equipment for fire-fighters</b>	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
<b>Special remarks on fire hazards</b>	: Low fire hazard. This material must be heated before ignition will occur.
<b>Special remarks on explosion hazards</b>	: Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

## 6 . Accidental release measures

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

## 7 . Handling and storage

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

## 8 . Exposure controls/personal protection

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

### Consult local authorities for acceptable exposure limits.

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

## 8 . Exposure controls/personal protection

<b>Hygiene measures</b>	: 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.
<b>Personal protection</b>	
<b>Respiratory</b>	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapour filter
<b>Hands</b>	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: neoprene, nitrile, polyvinyl alcohol (PVA), Viton®.
<b>Eyes</b>	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
<b>Skin</b>	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
<b>Environmental exposure controls</b>	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9 . Physical and chemical properties

<b>Physical state</b>	: Viscous liquid.
<b>Flash point</b>	: Open cup: $\geq 230^{\circ}\text{C}$ ( $>446^{\circ}\text{F}$ ) [Cleveland.]
<b>Auto-ignition temperature</b>	: Not available.
<b>Flammable limits</b>	: Not available.
<b>Colour</b>	: Pale, straw-yellow.
<b>Odour</b>	: Mild petroleum oil like.
<b>Odour threshold</b>	: Not available.
<b>pH</b>	: Not available.
<b>Boiling/condensation point</b>	: Not available.
<b>Melting/freezing point</b>	: Not available.
<b>Relative density</b>	: 0.859 to 0.8695 kg/L @ $15^{\circ}\text{C}$ ( $59^{\circ}\text{F}$ )
<b>Vapour pressure</b>	: Not available.
<b>Vapour density</b>	: Not available.
<b>Volatility</b>	: Not available.
<b>Evaporation rate</b>	: Not available.
<b>Viscosity</b>	: <b>32:</b> 32.8 cSt @ $40^{\circ}\text{C}$ ( $104^{\circ}\text{F}$ ), 5.4 cSt @ $100^{\circ}\text{C}$ ( $212^{\circ}\text{F}$ ), VI=101; <b>46:</b> 46.1 cSt @ $40^{\circ}\text{C}$ ( $104^{\circ}\text{F}$ ), 6.79 cSt @ $100^{\circ}\text{C}$ ( $212^{\circ}\text{F}$ ), VI=101; <b>68:</b> 67.4 cSt @ $40^{\circ}\text{C}$ ( $104^{\circ}\text{F}$ ), 8.74 cSt @ $100^{\circ}\text{C}$ ( $212^{\circ}\text{F}$ ), VI=101
<b>Pour point</b>	: <b>32:</b> $-45^{\circ}\text{C}$ ( $-49^{\circ}\text{F}$ ); <b>46:</b> $-42^{\circ}\text{C}$ ( $-44^{\circ}\text{F}$ ); <b>68:</b> $-33^{\circ}\text{C}$ ( $-27^{\circ}\text{F}$ )
<b>Solubility</b>	: Insoluble in water.

## 10 . Stability and reactivity

<b>Chemical stability</b>	: The product is stable.
<b>Hazardous polymerisation</b>	: Under normal conditions of storage and use, hazardous polymerisation will not occur.
<b>Materials to avoid</b>	: Reactive with reducing agents, oxidising agents, alkalis and acids.
<b>Hazardous decomposition products</b>	: May release COx, H2S, methacrylate monomers, aldehydes, alkyl mercaptans, sulfides, smoke and irritating vapours when heated to decomposition.

## 11 . Toxicological information

### Acute toxicity

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

**Conclusion/Summary** : Not available.

### Chronic toxicity

**Conclusion/Summary** : Not available.

### Irritation/Corrosion

**Conclusion/Summary** : Not available.

### Sensitiser

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Classification

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

### Mutagenicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

## 12 . Ecological information

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

### Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
ENVIRON™ AW 32, 46, 68	OECD 202	EC50 >10000 mg/l	Daphnia - Daphnia magna	48 hours
	OECD 209	EC50 >10000 ppm	Sludge - Activated sludge (respiration inhibition)	3 hours
	Acute lethality test	LC50 >20000 µL/L	Fish - Rainbow trout (Oncorhynchus mykiss)	96 hours

**Conclusion/Summary** : Not available.

### Biodegradability

## 12 . Ecological information

- Conclusion/Summary** : This product is inherently biodegradable.
- Other adverse effects** : No known significant effects or critical hazards.

## 13 . Disposal considerations

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

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

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

## 14 . Transport information

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

PG\* : Packing group

## 15 . Regulatory information

### United States

- HCS Classification** : Not regulated.

### Canada

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

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

### International regulations

- Canada inventory** : All components are listed or exempted.
- United States inventory (TSCA 8b)** : All components are listed or exempted.
- Europe inventory** : All components are listed or exempted.
- International lists** : **Australia inventory (AICS)**: All components are listed or exempted.  
**China inventory (IECSC)**: All components are listed or exempted.  
**Korea inventory**: All components are listed or exempted.  
**Philippines inventory (PICCS)**: All components are listed or exempted.

## 16 . Other information

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

Health	1
Flammability	1
Physical hazards	0
Personal protection	B

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



### References

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

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1/26/2011.

Responsible name :

Product Safety - RS

Indicates information that has changed from previously issued version.

For Copy of (M)SDS :

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

Internet: [lubricants.petro-canada.ca/msds](http://lubricants.petro-canada.ca/msds)

Lubricants:

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

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

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

For Product Safety Information: (905) 804-4752

### Notice to reader

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

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



# Material Safety Data Sheet

DEXRON VI ATF



## 1 . Product and company identification

<b>Product name</b>	: DEXRON VI ATF
<b>Synonym</b>	: RDL-3434, GM Mat. Spec. 9986153
<b>Code</b>	: DEX6, 460-613
<b>Material uses</b>	: Automatic Transmission Fluid for use in General Motors vehicles, requiring the DEXRON VI specification.
<b>Manufacturer</b>	: Petro-Canada Lubricants Inc. 2310 Lakeshore Road West Mississauga, Ontario Canada L5J 1K2
<b><u>In case of emergency</u></b>	: Suncor Energy: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

## 2 . Hazards identification

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

See toxicological information (section 11)

## 3 . Composition/information on ingredients

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

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

### 3 . Composition/information on ingredients

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

### 4 . First-aid measures

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

### 5 . Fire-fighting measures

- Flammability of the product** : May be combustible at high temperature.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Products of combustion** : Carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), smoke and irritating vapours as products of incomplete combustion.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Low fire hazard. This material must be heated before ignition will occur.
- Special remarks on explosion hazards** : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

### 6 . Accidental release measures

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



## 6 . Accidental release measures

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

## 7 . Handling and storage

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

## 8 . Exposure controls/personal protection

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

### Consult local authorities for acceptable exposure limits.

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

## 8 . Exposure controls/personal protection

- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9 . Physical and chemical properties

- Physical state** : Viscous liquid.
- Flash point** : Open cup: 206°C (402.8°F) [Cleveland.]
- Auto-ignition temperature** : Fire Point: 230°C (446°F)
- Flammable limits** : Not available.
- Colour** : Red.
- Odour** : Mild petroleum oil like.
- Odour threshold** : Not available.
- pH** : Not available.
- Boiling/condensation point** : Not available.
- Melting/freezing point** : Not available.
- Relative density** : 0.846 kg/L @ 15°C (59°F)
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Volatility** : Not available.
- Evaporation rate** : Not available.
- Viscosity** : 29.8 cSt @ 40°C (104°F), 6.0 cSt @ 100°C (212°F), VI=151
- Pour point** : -54°C (-65°F)
- Solubility** : Insoluble in water.

## 10 . Stability and reactivity

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

## 11 . Toxicological information

### Acute toxicity

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

**Conclusion/Summary** : Not available.

### Chronic toxicity

**Conclusion/Summary** : Not available.

## 11 . Toxicological information

### Irritation/Corrosion

**Conclusion/Summary** : Not available.

### Sensitiser

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Classification

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

### Mutagenicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

## 12 . Ecological information

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

### Aquatic ecotoxicity

**Conclusion/Summary** : Not available.

### Biodegradability

**Conclusion/Summary** : Not available.

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

## 13 . Disposal considerations

**Waste disposal** : The generation of waste should be avoided or minimised wherever possible. 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

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

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

## 14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
<b>TDG Classification</b>	Not regulated.	-	-	-		-
<b>DOT Classification</b>	Not regulated.	-	-	-		-

PG\* : Packing group

## 15 . Regulatory information

### United States

**HCS Classification** : Not regulated.

### Canada

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

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

### EU regulations

**Risk phrases** : This product is not classified according to EU legislation.

### International regulations

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

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

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

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

## 16 . Other information

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

Health	1
Flammability	1
Physical hazards	0
Personal protection	B

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



### **References**

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

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**Responsible name** : **Product Safety - JDW**

Indicates information that has changed from previously issued version.

### **For Copy of (M)SDS**

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

Internet: [lubricants.petro-canada.ca/msds](http://lubricants.petro-canada.ca/msds)

Lubricants:

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

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

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

## 16 . Other information

For Product Safety Information: (905) 804-4752

### Notice to reader

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

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