



Material Safety Data Sheet

| NFPA | HMIS (U.S.A.) | Rating | Protective Clothing | DOT (pictograms) |
|---|---------------------|-----------------|---------------------|------------------|
| <p>Health</p> <p>Fire Hazard</p> <p>Reactivity</p> <p>Specific hazard</p> | Health Hazard | 0 Insignificant | | |
| | Fire Hazard | 1 Slight | | |
| | Reactivity | 2 Moderate | | |
| | Personal Protection | 3 High | | |
| | | 4 Extreme | | |

Section I. Chemical Product and Company Identification

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| Product Name | ANTIFREEZE | Code | W269 |
| Synonym | Universal Antifreeze, Radiator Antifreeze, Diesel Antifreeze, Petro-Canada Antifreeze-Coolant, Petro-Canada Heavy Duty Antifreeze-Coolant, Pre-Mix Antifreeze, Petro-Canada Premium Radiator Antifreeze. | DSL | On the DSL. |
| Manufacturer | PETRO-CANADA P.O. Box 2844 Calgary, Alberta T2P 3E3 | TSCA | On TSCA list. |
| Material Uses | Used as an engine antifreeze coolant. | In case of Emergency | Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s). |

Section II. Composition and Information on Ingredients

| Name | CAS # | % (V/V) | Exposure Limits (ACGIH) | | |
|------------------------------------|---|---------|-------------------------|-----------------|---------------------------------|
| | | | TLV-TWA(8 h) | STEL | CEILING |
| 1) Ethylene glycol | 107-21-1 | ≥55 | Not established | Not established | 100 mg/m ³ (aerosol) |
| 2) Sodium tetraborate pentahydrate | 1330-43-4 | ≤5 | 1 mg/m ³ | Not established | Not established |
| Manufacturer Recommendation | Not applicable | | | | |
| Other Exposure Limits | Consult local, state, provincial or territory authorities for acceptable exposure limits. | | | | |

Section III. Hazards Identification.

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| Potential Health Effects | Contact can cause slight irritation of skin, eyes and respiratory tract. Extremely dangerous in case of ingestion. For more information, refer to Section 11. |
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Section IV. First Aid Measures

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

Section V. Fire-fighting Measures

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| Flammability | May be combustible at high temperature. | Flammable Limits | Lower: 3.2%, Upper: 15.3% |
| Flash Points | Closed Cup: 116°C (Tagliabue) Open Cup: 116°C (Cleveland) | Auto-Ignition Temperature | 413°C |
| Fire Hazards in Presence of Various Substances | Combustible in presence of open flames and sparks. | Explosion Hazards in Presence of Various Substances | Not a product presenting risks of explosion. |
| Products of Combustion | Carbon oxides (CO, CO ₂), smoke and irritating vapours as products of incomplete combustion. | | |
| Fire Fighting Media and Instructions | SMALL FIRE: Use DRY chemicals, CO ₂ , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. | | |

Section VI. Accidental Release Measures

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| Material Release or Spill | Small spill or leak: Dilute with water and mop up or absorb with an inert DRY material and place in an appropriate waste disposal container. Large spill or leak: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Dispose of in accordance with regional regulations. |
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Section VII. Handling and Storage

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| Handling | Avoid contamination with reactive substances. After handling, always wash hands thoroughly with soap and water. |
| Storage | Keep container dry. Keep container tightly closed. Keep in a cool, well-ventilated place. |

Section VIII. Exposure Controls/Personal Protection

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

Section IX. Physical and Chemical Properties

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| Physical State and Appearance | Clear viscous liquid. | Viscosity | Not available |
| Colour | Green. | Pour Point | Not available |
| Odour | Odourless. | Softening Point | Not applicable. |
| Odour Threshold | Not available | Dropping Point | Not applicable. |
| Boiling Point | 129 to 197°C (264 to 387°F) | Penetration | Not applicable. |
| Density | 1.115 to 1.145 (Water = 1) | Oil / Water Dist. Coeff. | Not available |
| Vapour Density | 2.1 (Air=1). | Ionicity (in water) | Not available |
| Vapour Pressure | 0.06 mmHg @ 20°C (68°F). | Dispersion Properties | Not available |
| Volatility | 0% (w/w) | Solubility | Soluble in water, methanol and diethyl ether. |

Section X. Stability and Reactivity

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| Corrosivity | Not available | | |
| Stability | The product is stable. | Hazardous Polymerization | Will not occur under normal working conditions. |
| Incompatible Substances / Conditions to Avoid | Reactive with oxidizing agents, acids and alkalis. | Decomposition Products | May release CO _x , smoke and irritating vapours when heated to decomposition. |

Section XI. Toxicological Information

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| Routes of Entry | Eye contact and ingestion. |
| Acute Lethality | LD50: 4700 mg/kg (oral/rat). [Ethylene Glycol] LD50: 9530 mg/kg (dermal/rabbit). [Ethylene Glycol] |
| Chronic or Other Toxic Effects | |
| Dermal Route: | Slightly hazardous in case of skin contact (irritant). |
| Inhalation Route: | Slightly hazardous in case of inhalation (lung irritant). Can cause nausea, headaches and vomiting. |
| Oral Route: | Extremely dangerous in case of ingestion. |
| Eye Irritation/Inflammation: | Slightly hazardous in case of eye contact (irritant). |
| Immunotoxicity: | Not available |
| Skin Sensitization: | Not available |
| Respiratory Tract Sensitization: | Not available |
| Mutagenic: | Not available |

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Available in French

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| Reproductive Toxicity: | Not available |
| Teratogenicity/Embryotoxicity: | Fetotoxic and teratogenic in mice at levels below maternal toxicity. |
| Carcinogenicity (ACGIH): | ACGIH A4: not classifiable as a human carcinogen. |
| Carcinogenicity (IARC): | Not available |
| Carcinogenicity (NTP): | Not available |
| Carcinogenicity (IRIS): | Not available |
| Carcinogenicity (OSHA): | Not available |

Other Considerations 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.

Section XII. Ecological Information

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


Section XIII. Disposal Considerations

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

Section XIV. Transport Information

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| DOT Classification | Not a DOT controlled material (United States). | Special Provisions for Transport | Not applicable. |
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Section XV. Regulatory Information

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| Other Regulations | <p>This product is acceptable for use under the provisions of WHMIS-CPR. All components of this formulation are listed on the CEPA-DSL (Domestic Substances List).</p> <p>All components of this formulation are listed on the US EPA-TSCA Inventory.</p> <p>This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.</p> <p>Please contact Product Safety for more information.</p> | | |
| DSD/DPD (EEC) | Not evaluated. | WHMIS (Canada) | D-2A |
| ADR (Europe) (Pictograms) | <p>NOT EVALUATED FOR EUROPEAN TRANSPORT</p> <p>NON ÉVALUÉ POUR LE TRANSPORT EUROPÉEN.</p> | TDG (Canada) (Pictograms) |  |

Section XVI. Other Information

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

Glossary

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

FDA - Food and Drug Administration
FIFRA - Federal Insecticide, Fungicide and Rodenticide Act
HCS - Hazardous Communication System
HMIS - Hazardous Material Information System
IARC - International Agency for Research on Cancer

USP - United States Pharmacopoeia
WHMIS - Workplace Hazardous Material Information System

For Copy of MSDS

Western Canada, telephone: 403-296-4158; fax: 403-296-6551
Ontario & Central Canada, telephone: 1-800-668-0220; fax: 1-800-837-1228
Quebec & Eastern Canada, telephone: 514-640-8308; fax: 514-640-8385

For Product Safety Information: (905) 804-4752

Prepared by Product Safety - TAR on 7/3/2001.

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