



# Material Safety Data Sheet

<b>WHMIS (Pictograms)</b>	<b>WHMIS (Classification)</b>	<b>Protective Clothing</b>
	Class D-2A: Material causing other toxic effects (VERY TOXIC).	

## Section 1. Product and Company Identification

<b>Product Name / Trade name</b>	<b>Universal Antifreeze/ Coolant</b>	<b>Associated Product's Item Code</b>	<b>15-244BEXP</b>
<b>Synonym</b>	Coolant. Antifreeze.	<b>CAS #</b>	Mixture.
<b>Chemical Family</b>	Glycol.	<b>DSL</b>	CEPA DSL: 1,2-Ethanediol
<b>Chemical Formula</b>	Not applicable.	<b>Validation Date</b>	4/4/2001.
<b>Manufacturer</b>	Recochem Inc. 850 Montee de Liesse Montreal, Quebec 514-341-3550	<b>Print Date</b>	5/5/2001.
<b>Material Uses</b>	Industrial applications: Coolant and antifreeze formulations.	<b>In Case of Emergency</b>	Recochem Inc. Communications and Regulatory Affairs Department (905) 791-1788

## Section 2. Hazardous Ingredients

Name	CAS #	% by Weight	Exposure Limits	
			Canadian Values (ACGIH)	U.S. Values (OSHA)
1) Ethylene glycol	107-21-1	90-98	CEIL: 100 ppm from ACGIH (Canada, 1999).	<sup>1)</sup> Not available. Ethylene glycol

## Section 3. Emergency Overview

<b>Hazard Overview</b>	WARNING. Poison HARMFUL OR FATAL IF SWALLOWED. Possible damage to liver and kidneys.
<b>Potential Acute Health Effects</b>	Very dangerous in case of ingestion. Severe over-exposure can result in death. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation.
<b>Note to Physician</b>	Treatment with ethanol to inhibit the metabolism of glycol to oxalate. Early administration of ethanol may counter the toxic effects of ethylene glycol (cardiopulmonary effects attributed to metabolic acidosis and renal damage). Hemodialysis or peritoneal dialysis have been of benefit.

## Section 4. First Aid Measures

<b>Eye Contact</b>	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. If irritation persists, seek medical attention.
<b>Skin Contact</b>	Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
<b>Inhalation</b>	Allow the victim to rest in a well-ventilated area. If irritation persists, seek medical attention.
<b>Ingestion</b>	DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. SEEK IMMEDIATE MEDICAL ATTENTION.

## Section 5. Fire Fighting Measures

<b>Products of Combustion</b>	These products are carbon oxides (CO, CO <sub>2</sub> ).
<b>Fire Fighting Media and Instructions</b>	SMALL FIRE: Use DRY chemicals, CO <sub>2</sub> , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
<b>Fire Hazards</b>	When heated to decomposition, it emits acrid smoke and irritating fumes.
<b>Explosion Hazards</b>	Not a product presenting risks of explosion.

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### Section 6. Accidental Release Measures

<b>Small Spill and Leak</b>	Dilute with water and mop up, or absorb with an inert DRY material and place in an appropriate waste disposal container.
<b>Large Spill and Leak</b>	Absorb with an inert material and put the spilled material in an appropriate waste disposal. Dispose of in accordance with regional regulations.

### Section 7. Handling and Storage

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

### Section 8. Exposure Controls, Personal Protection

<b>Engineering Controls</b>	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
<b>Personal Protection</b>	
<b>Eyes</b>	Splash goggles.
<b>Body</b>	No special protective clothing is required.
<b>Respiratory</b>	Wear appropriate respirator when ventilation is inadequate.
<b>Hands</b>	Gloves (impervious).

### Section 9. Physical and Chemical Properties

<b>Physical State and Appearance</b>	Clear viscous liquid.	<b>Odor</b>	Odorless.
<b>Molecular Weight</b>	Not applicable.	<b>Taste</b>	Sweet.
<b>pH (1% Soln/Water)</b>	9 to 11 [Basic.]	<b>Color</b>	Green.
<b>Boiling/Condensation Point</b>	197°C (386.6°F)	<b>Volatility</b>	0% (w/w).
<b>Melting/Freezing Point</b>	-13°C (8.6°F)	<b>Evaporation Rate</b>	0.01 compared to Butyl acetate.
<b>Specific Gravity</b>	1.115 to 1.145 (Water = 1)	<b>Odor Threshold</b>	Not available.
<b>Vapor Pressure</b>	0.06 mm of Hg (@ 20°C)	<b>Viscosity</b>	Not available.
<b>Vapor Density</b>	2.1 (Air = 1)	<b>Solubility</b>	Soluble in water, methanol, diethyl ether.
<b>VOC Content</b>	Not available.	<b>Other Properties</b>	Not available.

<b>The Product is:</b>	May be combustible at high temperature.
<b>Autoignition Temperature</b>	412.78°C (775°F)
<b>Flash Points</b>	CLOSED CUP: 116.1°C (241°F). (Tagliabue.). OPEN CUP: 115.6°C (240.1°F). (Cleveland).
<b>Flammable Limits</b>	LOWER: 3.2% UPPER: 15.3%
<b>Fire Hazards in Presence of Various Substances</b>	Combustible in presence of open flames and sparks.

### Section 10. Stability and Reactivity

<b>Stability</b>	The product is stable.
<b>Conditions of Instability</b>	No additional remark.
<b>Incompatibility with Various Substances</b>	Reactive with oxidizing agents, acids, alkalis.



### Section 11. Toxicological Information

<b>Routes of Entry</b>	Eye contact. Ingestion.
<b>Toxicity to Animals</b>	Acute oral toxicity (LD50): 4700 mg/kg [Rat]. Acute dermal toxicity (LD50): 9530 mg/kg [Rabbit].
<b>Acute Effects on Humans</b>	
<b>Eyes</b>	Slightly hazardous in case of eye contact (irritant).
<b>Skin</b>	Not considered a skin irritant or skin corrosive.
<b>Inhalation</b>	Slightly hazardous in case of inhalation (lung irritant). Vapours are unlikely due to physical properties.
<b>Ingestion</b>	Extremely dangerous in case of ingestion. May be fatal if swallowed.
<b>Chronic Effects on Humans</b>	<b>CARCINOGENIC EFFECTS:</b> A4 (Not classifiable for human or animal.) by ACGIH. <b>MUTAGENIC EFFECTS:</b> Not available. <b>TERATOGENIC EFFECTS:</b> Teratogenic in mice at levels below maternal toxicity. <b>DEVELOPMENTAL TOXICITY:</b> Fetotoxic in mice at levels below maternal toxicity. The substance may be toxic to kidneys, 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 12. Ecological Information

**Ecotoxicity** Not available.

### Section 13. Disposal Considerations

**Waste Information** Waste must be disposed of in accordance with federal, state and local environmental control regulations.

### Section 14. Transport Information

<b>TDG Classification (Canada)</b>	Not controlled under TDG (Canada).	
<b>PIN (Canada)</b>	Not applicable.	
<b>Special Provisions for Transport (Canada)</b>	Not applicable.	
<b>IMDG Classification</b>	9	
<b>PIN</b>	Shipping name: Environmentally hazardous substance, liquid, N.O.S (Ethylene glycol) UNNA: UN 3082 PG: III	
<b>Marine Pollutant</b>	Not pollutant.	
<b>DOT Classification (U.S.A)</b>	Not a DOT controlled material (United States).	
<b>PIN</b>	Not available.	
<b>Special Provisions for Transport (U.S.)</b>	Regulated Quantity (RQ)= 5000 lbs (2268 kg) For bulk shipments equal to or greater than Regulated Quantity (RQ), please adhere to classification as outlined in IMDG Classification section.	

### Section 15. Other Regulatory Information and Pictograms

<b>WHMIS Classification (Canada)</b>	Class D-2A: Material causing other toxic effects (VERY TOXIC).									
<b>HCS Classification (U.S.A.)</b>	Class: Target organ effects.									
<b>USA Regulatory Lists</b>	TSCA inventory: 1,2-Ethanediol									
<b>Hazardous Material Information System (U.S.A.)</b>	<table border="1"> <tr> <td>Health</td> <td>1</td> </tr> <tr> <td>Flammability</td> <td>1</td> </tr> <tr> <td>Reactivity</td> <td>0</td> </tr> <tr> <td>Personal Protection</td> <td>B</td> </tr> </table>	Health	1	Flammability	1	Reactivity	0	Personal Protection	B	<b>National Fire Protection Association (U.S.A.)</b> <p>Health: 1, Flammability: 1, Reactivity: 0, Specific Hazard: 0</p>
Health	1									
Flammability	1									
Reactivity	0									
Personal Protection	B									



**Section 16. Other Information**

Validated and verified by Product Development and Technical Coordinator on 4/4/2001.

Printed 5/5/2001.

**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.*