Material Safety Data Sheet

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

Section 1. Product and Company Identification

Product Name / Trade name	**Heavy Duty Antifreeze/ Coolant**	**Associated Product's Item Code**	**15-754**
Synonym	Coolant. Antifreeze.	**CAS #**	Mixture.
Chemical Family	Glycol.	**DSL**	CEPA DSL: 1,2-Ethanediol
Chemical Formula	Not applicable.	**Validation Date**	10/03/2004.
Manufacturer	Recochem Inc. 850 Montee de Liesse Montreal, Quebec 514-341-3550	**Print Date**	10/03/2004.
Material Uses	Industrial applications: Coolant and antifreeze formulations.	**In Case of Emergency**	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).	1) Ethylene glycol Not available.

Section 3. Emergency Overview

Hazard Overview	WARNING. Poison HARMFUL OR FATAL IF SWALLOWED. Possible damage to liver and kidneys.
Potential Acute Health Effects	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.
Note to Physician	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

Eye Contact	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. If irritation persists, seek medical attention.
Skin Contact	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.
Inhalation	Allow the victim to rest in a well-ventilated area. If irritation persists, seek medical attention.
Ingestion	DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. SEEK IMMEDIATE MEDICAL ATTENTION.

Section 5. Fire Fighting Measures

Products of Combustion	These products are carbon oxides (CO, CO_2).
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.
Fire Hazards	When heated to decomposition, it emits acrid smoke and irritating fumes.
Explosion Hazards	Not a product presenting risks of explosion.

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Section 6. Accidental Release Measures

Small Spill and Leak	Dilute with water and mop up, or absorb with an inert DRY material and place in an appropriate waste disposal container.
Large Spill and Leak	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

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 8. Exposure Controls, Personal Protection

Engineering Controls	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.
Personal Protection	
Eyes	Splash goggles.
Body	No special protective clothing is required.
Respiratory	Wear appropriate respirator when ventilation is inadequate.
Hands	Gloves (impervious).

Section 9. Physical and Chemical Properties

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

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

Section 10. Stability and Reactivity

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

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Section 11. Toxicological Information

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

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

IMDG Classification	9
PIN	Shipping name: Environmentally hazardous substance, liquid, N.O.S (Ethylene glycol) UNNA: UN 3082 PG: III
Marine Pollutant	Not pollutant.

DOT Classification (U.S.A)	Not a DOT controlled material (United States).
PIN	Not available.
Special Provisions for Transport (U.S.)	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

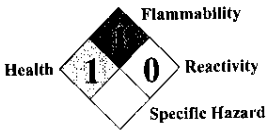
WHMIS Classification (Canada)	Class D-2A: Material causing other toxic effects (VERY TOXIC).

HCS Classification (U.S.A.)	Class: Target organ effects.
USA Regulatory Lists	TSCA inventory: 1,2-Ethanediol

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

	1
Flammability	1
Reactivity	0
Personal Protection	B

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



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Section 16. Other Information

Validated and verified by Product Development and Technical Coordinator on 10/03/2004.	Printed 10/03/2004.

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