ProGuard Antifreeze Coolant Concentrate

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	ProGuard Antifreeze Coolant
MSDS Code:	001981
Synonyms:	Antifreeze and Summer Coolant Concentrate
Intended Use:	Antifreeze/Coolant
Responsible Party:	Lyden Oil Company Lu 3711 LeHarps Road Youngstown, Ohio 44515
Customer Service:	(800) 362-9410
Technical Information:	330-792-1100
MSDS Information:	Internet: http:/www.lydenoil.com/
Emergency Telephone Numbers:	Chemtrec: 800-424-9300 (24 Hours) California Poison Control System: 800-356-3219

2. HAZARDS IDENTIFICATION

Emergency Overview

WARNING!
Harmful If Swallowed
Aspiration Hazard
Probable Reproductive Hazard
Target Organ Hazard

Appearance: Green
Physical Form: Liquid
Odor: Mild glycol

Potential Health Effects

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Contact may cause mild skin irritation including redness and a burning sensation. Prolonged or repeated contact can defat the skin, causing drying and cracking of the skin, and possibly dermatitis (inflammation). No harmful effects from skin absorption are expected.

Inhalation (Breathing): No information available on acute toxicity.

Ingestion (Swallowing): Toxic. May be harmful if swallowed. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the digestive tract, irritation of the respiratory tract, coughing, nausea, vomiting, diarrhea, abdominal pain, irregular heartbeats (arrhythmias), pulmonary edema (accumulation of fluids in the lungs), visual disturbances, signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue), convulsions and coma.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders respiratory (asthma-like) disorders kidney disorders liver disorders and pregnancy.

See Section 11 for additional Toxicity Information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS	Concentration (wt %)
Ethylene Glycol	107-21-1	90 - 95
Diethylene Glycol	111-46-6	0 - 5
Dipotassium Phosphate	7758-11-4	1 - 2

4. FIRST AID MEASURES

Eye: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical

Skin: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

Ingestion (Swallowing): Seek emergency medical attention. This material is a potential aspiration hazard. If victim is drowsy or unconscious, place on the left side with the head down and do not give anything by mouth. Because of potential toxicity and the hazard of aspiration, vomiting should be induced only under direction from a physician or poison center. Do not leave victim unattended and observe closely for adequacy of breathing.

Notes to Physician: Toxic metabolites of ethylene glycol may cause acidosis, coma, convulsions, renal failure, or circulatory collapse. The monitoring of urine output, serum creatinine, electrolytes, acid base balance, urine hemoglobin and serium calcium is recommended following significant exposures. Ethanol blocks the formation of glycolic acid and therefore is the antidote of choice. Because of the rapid onversion (3-hour elimination half-life) of the ethylene glycol, ethanol should be administered as soon as possible in cases of severe poisoning. If medical care will be delayed several hours, use 3-4 one-ounce oral (shots) of 86-proof whiskey before or during transport to the hospital.

5. FIRE-FIGHTING MEASURES

NFPA 704 Hazard Class

Health: 2 **Flammability:** 1 **Instability:** 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: If spill/release in excess of EPA reportable quantity (see Section 15) is made into the environment, immediately notify the National Response Center (phone number 800-424-8802). Stop spill/release if it can be done with minimal risk. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements.

Methods for Containment and Clean-Up: Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not eat, drink, or smoke when using this product. Wash thoroughly after handling. Do not breathe vapors or mists. Use good personal hygiene practices and wear appropriate personal protective equipment.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Conditions for safe storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component	ACGIH	OSHA	Other:
Ethylene Glycol	100 mg/m^3 CEIL Aerosol	---	

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Personal Protective Equipment (PPE):

Eye/Face: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the performance of their products. Suggested protective materials: Nitrile, Butyl rubber, Viton (fl uoroelastomers).

Respiratory: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters with R or P95 filters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 191 0.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (MUC) as directed by regulation or the manufacturer's instructions, in oxygen deficient (less than 19.5 percent oxygen) situations, or other conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance:	Green
Physical Form:	Liquid
Odor:	Mild glycol
Odor Threshold:	No data
pH:	10.5-11.0 (50% water solution)
Vapor Pressure:	<0.1mm Hg
Vapor Density (air=1):	2.1
Boiling Point/Range:	339-348°F / 171-176°C
Melting/Freezing Point:	0°F / -18°C
Solubility in Water:	Complete
Partition Coefficient (n-octanol/water) (Kow):	No data
Specific Gravity:	1.12 @ 60°F (15.6°C)
Bulk Density:	9.3 lbs/gal
Percent Volatile:	97%
Evaporation Rate (nBuAc=1):	Nil
Flash Point:	247°F / 119°C
Test Method:	Cleveland Open Cup (COC), ASTM D92
LEL (vol % in air):	3.2
UEL (vol % in air):	15.3
Autoignition Temperature:	No data

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated conditions of storage and handling.

Conditions to Avoid: Avoid all possible sources of ignition.

Materials to Avoid (Incompatible Materials): Avoid contact with strong acids and strong oxidizing agents.

Hazardous Decomposition Products: Combustion can yield carbon monoxide.
Hazardous Polymerization: Not known to occur.

11. TOXICOLOGICAL INFORMATION

Chronic Data:

Ethylene Glycol

Target Organs: Ingestion of ethylene glycol by humans results in kidney damage (renal epithelial damage and oxalate crystals in the tubules). Administration of ethylene glycol resulted in hepatocellular hyaline degeneration in male mice fed diets containing 12,500 or 25,000 ppm ethylene glycol and female mice fed diets containing 50,000 ppm ethylene glycol.
Reproductive: Ethylene glycol caused malformations in the offspring of mice and rats when administered by gavage or in the drinking water during organogenesis. It was not teratogenic when fed in the diet, by dermal application of up to 3550 mg/kg/day or by nose-only inhalation at up to 2500 mg/m^{3}No effects on fertility or reproductive performance were seen in a three-generation study in rats exposed orally.

Mutagenic Effects:

Diethylene Glycol

Target Organs: Accidental human ingestion of diethylene glycol resulted in kidney damage (severe renal epithelial damage, tubular necrosis, and anuria). Liver damage (vacuolation and hyaline degeneration) was also seen in rats fed diets containing 1 to 4% diethylene glycol for 2 years.

Acute Data:

Component	Oral LD50	Dermal LD50	Inhalation LC50
Ethylene Glycol	1.5 g/kg (est. human)	9,530 mg/kg(rabbit)	No data
Diethylene Glycol	1.2 g/kg (human)	11.9 g/kg (rabbit)	No data

12. ECOLOGICAL INFORMATION

Not evaluated.

13. DISPOSAL CONSIDERATIONS

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

Container contents should be completely used and containers should be emptied prior to discard.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation (DOT)

Shipping Description:	***Shipping description is only for shipments that contain a CERCLA Reportable Quantity in a single container, othewise not regulated. See Section 15 for RQ amount.*** Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol), 9, UN3082, III, RQ
Non-Bulk Package Marking:	None
Non-Bulk Package Labeling:	None
Bulk Package/Placard Marking:	None / 3082 ***or*** Class 9 / 3082
Packaging - References:	None; None; 49 CFR 173.241
Hazardous Substance:	See Section 15 for RQ's
Emergency Response Guide:	171
Note:	***Shipping description may be modified by placing the UN or NA number as the first element. This order becomes mandatory on January 1, 2013.***

International Maritime Dangerous Goods (IMDG)

Shipping Description:	Not regulated
Note:	Federal compliance requirements may apply. See 49 CFR 171.12.

International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

UN/ID #:	Not regulated
Note:	Federal compliance requirements may apply. See 49 CFR 171.11.

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	---	---	---
Max. Net Qty. Per Package:	---	---	---

15. REGULATORY INFORMATION

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):
This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Acute Health:	Yes
Chronic Health:	Yes
Fire Hazard:	No
Pressure Hazard:	No
Reactive Hazard:	No

CERCLA/SARA - Section 313 and 40 CFR 372:
This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Component	Concentration (wt %)	de minimis
Ethylene Glycol	90 - 95	1.0%

EPA (CERCLA) Reportable Quantity (in pounds):
This material contains the following chemicals subject to the reporting requirements of 40 CFR 302.4:

Component	RQ
Ethylene Glycol	5000 lb

California Proposition 65:
This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

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

WHMIS Hazard Class
D1 B
D2A

National Chemical Inventories:
All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.
All components are either on the DSL, or are exempt from DSL listing requirements.

U.S. Export Control Classification Number: EAR99

16. OTHER INFORMATION

Issue Date:	03-24-2008
Status:	Final
Previous Issue Date:	
Revised Sections or Basis for Revision:	Periodic review and update Emergency Overview (Section 2) Health Hazard (Section 2) Accidential Release information (Section 6) Environmental hazards (Section 12) Shipping information (Section 14) Regulatory information (Section 15)
MSDS Code:	001981

MSDS Legend:
ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service Registry; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

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