

PRODUCT NAME: ABRO Radiator Coolant
PRODUCT NUMBER/SIZE: EC-501 / 1 Gallon

Revision Date: 6/09/15

SECTION 1 Identification of the Substance and of the Company/Undertaking

MANUFACTURER'S NAME: ABRO INDUSTRIES, INC.
ADDRESS: 3580 Blackthorn Court
South Bend, IN 46628
USA
PRODUCT DESCRIPTION: Radiator Coolant/Anticorrosive additive
COMPANY PHONE: 574-232-8289
EMERGENCY 24-HR TELEPHONE: Chemtrec: US/Canada 1-800-424-9300
International +1-703-527-3887

SECTION 2 Hazards Identification

Classification:
Specific Target Organ Toxicity – repeated exposure Category 2

Label Pictogram(s):



Signal Word: Warning

Hazard Phrases: Harmful if swallowed. May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Precautionary Phrases: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist, spray, and vapors. Wash affected areas thoroughly after handling. Do not eat, drink or smoke when using this product. Wear personal protective equipment as required

Response: If swallowed: Immediately call doctor/physician or poison center. If swallowed: rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention.

Storage / Disposal: Store away from direct sunlight in a dry, cool and well ventilated area. Keep container tightly closed. Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

Other: Keep out of reach of children.

SECTION 3
Composition/Information on Ingredients

COMPONENTS	CAS Number	% by weight	PEL (OSHA)	TLV (ACGIH)
Ethylene Glycol	107-21-1	<5	50 ppm	50 ppm
Diethylene Glycol	111-46-6	<5	None	None
Inorganic salts and organic acid salts	proprietary	<10	5 mg/m ³	5 mg/m ³
Water	7732-18-5	85-95	None	None

SECTION 4
First Aid Measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.
Inhalation	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek immediate medical advice. Allow the victim to rest. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	Get medical attention immediately. Call poison control center rinse mouth. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIAN: The principal toxic effects of ethylene glycol, when swallowed, are kidney damage and metabolic acidosis. The combination of metabolic acidosis, an osmol gap and oxalate crystals in the urine is evidence of ethylene glycol poisoning. Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. Respiratory support with mechanical ventilation may be required. There may be cranial nerve involvement in the late stages of toxicity from swallowed ethylene glycol. In particular, effects have been reported involving the seventh, eighth, and ninth cranial nerves, presenting with bilateral facial paralysis, diminished hearing and dysphagia. Ethanol is antidotal and its early administration may block the formation of nephrotoxic metabolites of ethylene glycol in the liver. The objective is to rapidly achieve and maintain a blood ethanol level of approximately 100 mg/dl by giving a loading dose of ethanol followed by a maintenance dose. Intravenous administration of ethanol is the preferred route. Ethanol blood levels should be checked frequently. Hemodialysis may be required. 4-Methyl pyrazole (Fomepizole®), a potent inhibitor of alcohol dehydrogenase, has been used therapeutically to decrease the metabolic consequences of ethylene glycol poisoning. Fomepizole® is easier to use clinically than ethanol, does not cause CNS depression or hypoglycemia and requires less monitoring than ethanol. Additional therapeutic modalities which may decrease the adverse consequences of ethylene glycol metabolism are the administration of both thiamine and pyridoxine. As there are complicated and serious overdoses, we recommend you consult with the toxicologists at your poison control center.

SECTION 5 Fire Fighting Measures

Ignition temp:	Not determined
Flammable limits (% by volume):	LEL: 3.2%, UEL: 15.3%
Flash Point:	117°C (242°F)
Fire Extinguishing Agents:	According to the U.S. National Fire Protection Association Guide, use water fog, dry chemical, foam, or carbon dioxide. Water or foam may cause frothing. Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for persons attempting to stop the leak.
Explosion hazards:	For fires involving this material, do not enter any enclosed or confined space without self-contained breathing apparatus to protect against the hazardous effects of combustion products or oxygen deficiency.

SECTION 6 Accidental Release Measures

Environmental precautions:	No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 7).
Personal 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 to sewers, waterways, soil, or air.
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 12). 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 12 for waste disposal.

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.

SECTION 7 Handling and Storage

Handling

Put on appropriate personal protective equipment (see section 8). Workers should wash hands and face before eating, drinking and smoking. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.

Storage

Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well ventilated area, away from incompatible materials (see section 9). 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.

Not suitable

Prolonged exposure to elevated temperature and oxidants

SECTION 8 Exposure Controls/Personal Protection

Occupational exposure limits

Ingredient name

Ethylene glycol; Ethanediol

Occupational exposure limits

ACGIH TLV (United States) C: 100 mg/m³

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Control 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.

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.

Personal Protection

Eyes

Avoid contact with eyes. Safety glasses with side shields or chemical goggles.

Skin and body	Do not get on skin or clothing. Wear suitable protective clothing.
Respiratory	Use adequate ventilation. Do not breathe vapor or mist.
Hands	The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application.

SECTION 9 Physical and Chemical Properties

Appearance & odor:	Fluorescent Green liquid
Boiling point (deg. F):	N/A
Vapor pr. (mmhg @ 25 deg. c):	<0.1
Density (kg/l at 15 deg. c):	1.006
Vapor density (air = 1):	2.1
ph of undiluted product:	7 – 9
Solubility (water):	Soluble
Percent volatile by volume:	N/A
Evaporation:	<1
Viscosity (all product grades):	N/A

SECTION 10 Stability and Reactivity

Stability and reactivity	The product is stable.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame).
Incompatibility with substances	Reactive or incompatible with the following materials: oxidizing. various materials and acids
Hazardous decomposition Products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.

SECTION 11 Toxicological Information

Acute toxicity	Potential chronic health effects.
Carcinogenicity	No known significant effects or critical hazards.
Teratogenicity	See Other Information

Other information

Ethylene glycol: Ingestion of ethylene glycol can cause metabolic acidosis, kidney damage, central nervous system depression, convulsions and death. The estimated human lethal dose is approximately 1 ml/kg (about 1/2 cup for an adult). Vapor from hot operations or an aerosol can cause eye and respiratory irritation. Birth defects were reported in laboratory animals fed ethylene glycol repeatedly in large amounts. Based on these studies, there may be a potential for birth defects following ingestion of ethylene glycol by pregnant women.

Diethylene glycol: This product contains diethylene glycol which has been reported to cause CNS depression, kidney and liver damage when ingested. Diethylene glycol has also been reported to cause developmental effects in laboratory animals at maternally toxic doses, and reproductive effects in laboratory animals at high doses.

SECTION 12 **Ecological Information**

Ecotoxicity

Ethylene Glycol: LC50 Fathead Minnow <10,000 mg/L/96 hr

Diethylene Glycol: LC50 western mosquitofish >32,000 mg/L/96 hr

EC50 Daphnia Magna 100,000 mg/L/48 hr

Bacterial (*Pseudomonas putida*): 10,000 mg/l

Protozoa (*Entosiphon sulcatum* and *Uronema parduczi*; Chatton-Lwoff): >10,000 mg/l

Algae (*Microcystis aeruginosa*): 2,000 mg/l

Green algae (*Scenedesmus quadricauda*): >10,000 mg/lhr

Mobility

Spillages may penetrate the soil causing ground water contamination.

Bioaccumulative potential

This product is not expected to bio accumulate through food chains in the environment.

Persistence/degradability

Inherently biodegradable

Other ecological Information

Miscible in water. Spills on water will disperse throughout the water phase. Unlikely to be harmful to aquatic organisms unless glycol concentration is high.

SECTION 13 **Disposal Considerations**

Waste Information

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

SECTION 14

Transport Information

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

U.S. DOT UN/ID Number: Not Regulated
Proper shipping name:
Hazard class:
Packing Group:
Exceptions:
Environmental Hazards:
Transport in Bulk: Not applicable
Special Precautions: None

IMO/IMDG UN/ID Number: Not Regulated
Proper shipping name:
Hazard class:
Packing Group:
Exceptions:
Environmental Hazards:
Transport in Bulk:
Special Precautions:

ICAO/IATA UN/ID Number: Not Regulated
Proper shipping name:
Hazard Class:
Packing Group:
Exceptions:
Environmental Hazards:
Transport in Bulk:
Special Precautions:

SECTION 15

Regulatory Information

CERCLA SECTION 103: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for this product, based on the RQ for Ethylene Glycol (55% maximum) of 5,000 lbs., is 9090 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

U.S. Federal Regulations

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Ethylene glycol; ethanediol; Diethylene glycol; 2,2'-oxybisethanol

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

Antifreeze (SCA): Immediate (acute) health hazard, Delayed (chronic) health hazard

EPA SARA 313	Product name	CAS number	Concentration
	Ethylene glycol; ethanediol	107-21-1	<5%

California Prop. 65

The normal consumer use of this product does not result in exposures to chemicals known to the State of California to cause Cancer and/or Reproductive Harm above the significant risk level for carcinogens or the maximum allowable dose levels for reproductive toxins. Therefore, no warnings are required for consumer packages. Industrial or other occupational use of this product at higher frequency and using larger quantities of this product may result in exposures exceeding these levels and are labeled accordingly.

EPA TSCA INVENTORY

All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CEPA

All of the ingredients are listed on the Canadian Domestic Substances List.

CANADIAN WHMIS CLASSIFICATION: Class D - Division 2 - Subdivision A - (A very toxic material causing other toxic effects)

CANADIAN WHMIS HAZARD SYMBOLS: This SDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the SDS contains all of the information required by the CPR.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS): All of the ingredients are listed on the EINECS inventory.

AUSTRALIA: All of the ingredients of this product are listed on the Australian Inventory of Chemical Substances.

JAPAN: All of the ingredients of this product are listed on the Japanese Existing and New Chemical Substances (METI) List.

KOREA: All of the ingredients of this product are listed on the Korean Existing Chemicals List (KECL).

CHINA. All of the ingredients of this product are listed on the Inventory of Existing Chemical Substances in China (IECSC).

PHILIPPINES All of the ingredients of this product are listed on the Philippines Inventory of Chemicals and Chemical Substances

	HMIS	NFPA
Health	2	1
Flammability	1	1
Physical Hazards	0	-
Instability	-	0
Specific Hazard	--	--

SECTION 16
Other Information

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore

users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

ABBREVIATIONS:

NG="NOT GIVEN"

BT="BETWEEN"

<="LESS THAN"

>="GREATER THAN"

ND = Not Determined

NA = Not Applicable