Safety Data Sheet

SDS No. 12028

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

DURALIFE® ANTIFREEZE/ COOLANT
Product Use : Antifreeze/ Coolant
Manufacturer :
AMTECOL, Inc.
810 Wright Ave, Richmond, CA 94804, U.S.A.
www.amtecol.com
Transportation Emergency & Emergency spill information :
Call CHEMTREC : (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
Health Emergency : Amtecol Emergency Information Center : 1-866-268-1888
Other Product Information :
Technical Assistance/SDS info & Customer Service : 1-510-235-7979 Email : info@amtecol.com

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

ACUTE TOXICITY: ORAL - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) central nervous system (CNS) and kidneys - Category 2

Label Elements

EMERGENCY OVERVIEW

- HARMFUL OR FATAL IF SWALLOWED
- CAUSES EYE IRRITATION
- MAY CAUSE DIZZINESS, DROWSINESS AND REDUCED ALERTNESS
- POSSIBLE BIRTH DEFECT HAZARD – CONTAINS MATERIAL THAT MAY CAUSE BIRTH DEFECTS BASED ON ANIMAL DATA
- MAY CAUSE DAMAGE TO KIDNEY

IMMEDIATE HEALTH EFFECTS

EYE : Contact with the eyes causes irritation . Symptoms may include pain, tearing, reddening, swelling and impaired vision .

SKIN : Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin .

INGESTION : Toxic , may be harmful or fatal if swallowed .

INHALATION : The vapor or fumes from this material may cause respiratory irritation . Symptoms of respiratory irritation may include coughing and difficulty breathing .

DELAYED OR OTHER HEALTH EFFECTS

Contains material that may be harmful to the developing fetus based on animal data .

TARGET ORGANS : Contains material that may cause damage to the following organ(s) following repeated ingestion based on animal data : Kidney

SECTION 3. COMPOSITION INFORMATION/ INGREDIENTS

COMPONENTS	CAS NUMBER	% WEIGHT
ETHYLENE GLYCOL	107-21-1	< 97
DIETHYLENE GLYCOL	111-46-6	< 5
DIPOTASSIUM PHOSPHATE	7758-11-4	<2

SECTION 4. FIRST AID MEASURES

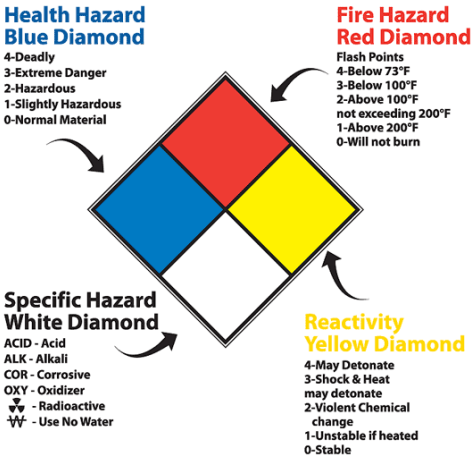
Eye Contact : Immediately flush eyes with large amounts of water and continue flushing until irritation subsides. Get medical attention if irritation persists .
Skin Contact : To remove the material from skin, use soap and water . Discard contaminated clothing and shoes or thoroughly clean before reuse .
Inhalation(Breathing) : Move the exposed person to fresh air . If not breathing, give artificial respiration . If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue
Ingestion(Swallowing) : If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person .

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.

SECTION 5. FIREFIGHTING MEASURES

Fire Classification:
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.
Flammable Properties:
Flashpoint: (Pensky-Martens Closed Cup) 115 °C (239 °F) (Min)
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: No data available
Upper: No data available
Extinguishing Media : Use dry chemical, foam, water fog or carbon dioxide CO2 to extinguish flames.

NFPA 704 HAZARD RATINGS:



Protection of Fire Fighters:
Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Accidental Release Measures : Stop the source of the leak or release. Clean up releases as soon as possible, observing precautions in Exposure Controls/Personal Protection. Contain liquid to prevent further contamination of soil, surface water or ground-water. Clean up small spills using appropriate techniques such as sorbent materials or pumping. Where feasible and appropriate, remove contaminated soil.
Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.
Reporting: Follow prescribed procedures for reporting and responding to larger releases. Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7. HANDLING AND STORAGE

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Keep out of the reach of children. Wash thoroughly after handling.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material . Protect container(s) against physical damage.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force.
"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.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

General considerations:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.
Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Occupational Exposure Limits:

Component	ACGIH	OSHA Z-1	Other
Ethylene Glycol	CEILING : 100 mg/m3 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.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 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 (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Green/Red/Orange/Blue/Yellow	**Freezing Point :** - 34 °F (- 37 °C)
Odor : Petroleum odor	**Solubility :** Complete
Physical State : Liquid	**Viscosity @ 100 °C :** No data available
Percent Volatile: 97%	**Vapor Pressure:**<0.01 mmHg @ 20 °C (68 °F)
Boiling Point : 226 °F(108°C) (50% water solution)	**Vapor Density (air=1) :** 2.1
Melting Point : Not Applicable(N/A)	**pH :** 7.0 -11.0 (50% water solution)
Specific Gravity : >1	**Auto-ignition Temperature:** No data

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: Ketones (Elevated temperatures), Aldehydes (Elevated temperatures)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.
Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.
Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.
Acute Toxicity:
Ethylene Glycol :
LD50(Rat) : >5,000.00 mg/kg
ATE US(oral) : 500.00 mg/kg bw (bodyweight)
Diethylene Glycol:
LD50(Rabbit): 11,890.00 mg/kg
ATE US (oral) : 500.00 mg/kg bw
ATE US (demal) : 11,890.00 mg/kg bw
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.
Germ Cell Mutagenicity: In vivo genotoxicity studies, results have been negative for dominant lethal mutations in F344 rats following administration in F2 males (from a multigeneration study) of up to 1000 mg ethylene glycol/kg body weight per day for 155 days. Results have also been negative for chromosomal aberrations in bone marrow cells of male Swiss mice exposed (by intraperitoneal injection) to 638 mg ethylene glycol/kg body weight per day for 2 days. There was only a slight increase in the incidence of micronuclei in the erythrocytes of Swiss mice administered >1250 mg ethylene glycol/kg body weight by gavage (or by intraperitoneal injection). However, it should be noted that the magnitude of the effect was small, was not dose related, and was based on pooled data for treated groups.
Reproductive Toxicity: Ethylene glycol induces developmental effects in rats and mice by all routes of exposure. Ethylene glycol is teratogenic, inducing primarily skeletal and external malformations in rodents, sometimes at doses less than those that are maternally toxic. In repeated-dose toxicity studies, there has been no evidence of adverse impact on reproductive organs; in specialized studies, including a three-generation study in rats and continuous-breeding protocols in mice, evidence of reproductive effects has been restricted to mice (but not rats or rabbits) exposed to doses considerably greater than those associated with developmental effects in this species or renal effects in rats. It is believed that developmental and teratogenic toxicity occurs in rodents only at doses that exceed saturation of glycolic acid metabolism. Based on human metabolism data, the National Toxicology Program Center for the Evaluation of Risks to Human Reproduction reviewed the ethylene glycol literature and concluded that there is negligible concern for reproductive or developmental toxicity in humans at typical exposure levels.
Target Organ Toxicity :
- 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.
- 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.

Additional Toxicology Information:

This product contains diethylene glycol (DEG). The estimated oral lethal dose is about 50 cc (1.6 oz) for an adult human. DEG has caused the following effects in laboratory animals: liver abnormalities, kidney damage and blood abnormalities. It has been suggested as a cause of the following effects in humans: liver abnormalities, kidney damage, lung damage and central nervous system damage.
This product contains ethylene glycol (EG). The toxicity of EG via inhalation or skin contact is expected to be slight at room temperature. The estimated oral lethal dose is about 100 cc (3.3 oz.) for an adult human. Ethylene glycol is oxidized to oxalic acid which results in the deposition of calcium oxalate crystals mainly in the brain and kidneys. Early signs and symptoms of EG poisoning may resemble those of alcohol intoxication. Later, the victim may experience nausea, vomiting, weakness, abdominal and muscle pain, difficulty in breathing and decreased urine output. When EG was heated above the boiling point of water, vapors formed which reportedly caused unconsciousness, increased lymphocyte count, and a rapid, jerky movement of the eyes in persons chronically exposed. When EG was administered orally to pregnant rats and mice, there was an increase in fetal deaths and birth defects. Some of these effects occurred at doses that had no toxic effects on the mothers. We are not aware of any reports that EG causes reproductive toxicity in human beings.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

Environmental Fate

Ready Biodegradability: This material is expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 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.

SECTION 14. TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

U.S. Department of Transportation (DOT)
Shipping Description: Proprietary antifreeze preparation in non-bulk packaging; not regulated for transport under 49 CFR
Additional Information: Bulk shipments containing a reportable quantity (RQ, 5000 pounds or more) of ethylene glycol in a single packaging are transported as hazardous material. The shipping description is: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL CONTAINS BITTERANT), 9, III, RQ (ETHYLENE GLYCOL)
International Maritime Dangerous Goods (IMO/IMDG)
Shipping Description: Not regulated as dangerous goods for transportation under the IMDG code
Note: U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 25.
International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)
Shipping Description: Anti-freeze Preparations, Proprietary; not regulated as dangerous goods for transport under the ICAO TI or IATA DGR
Note: U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 24.

SECTION 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 (Immediate) Health Hazard: Yes
Chronic (Delayed) Health Hazard: Yes
Fire Hazard: No
Pressure Hazard: No
Reactive Hazard: No

REGULATORY LISTS SEARCHED:
01-1=IARC Group 1
01-2A=IARC Group 2A
01-2B=IARC Group 2B
02=NTP Carcinogen
03=EPCRA 313
04=CA Proposition 65
05=MA RTK
06=NJ RTK
07=PA RTK
The following components of this material are found on the regulatory lists indicated.

Diethylene glycol	07
Ethylene Glycol	05, 06, 07

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	de minimis
Ethylene Glycol	>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.
National Chemical Inventories:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL(Canada), EINECS (European Union), IECSC (China), KECI (Korea), PICCS(Philippines),TSCA (United States).
One or more components does not comply with the following chemical inventory requirements: ENCS (Japan).
WHMIS Hazard Class:
Class D, Division 1, Subdivision B: Toxic Material - Acute Lethality
Class D, Division 2, Subdivision B: Toxic Material - Chronic Toxic Effects

U.S. Export Control Classification Number: EAR99

SECTION 16. OTHER INFORMATION

HMIS RATINGS: Health: 2 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).
LABEL RECOMMENDATION:
Label Category : ANTIFREEZE/COOLANT 1 - AFC1

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

OSHA - Occupational Safety and Health Administration	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
ACGIH - American Conference of	CAS - Chemical Abstract Service Number

Government Industrial Hygienists	
GHS - Globally Harmonized System	SDS - Safety Data Sheet
API - American Petroleum Institute	IMO/IMDG - International Maritime Dangerous Goods Code
DOT - Department of Transportation (USA)	NCEL - New Chemical Exposure Limit
IARC - International Agency for Research on Cancer	NFPA - National Fire Protection Association (USA)
EPA - Environmental Protection Agency	SCBA - Self-Contained Breathing Apparatus
TLV - Threshold Limit Value	NTP - National Toxicology Program (USA)
HMIS -Hazardous Materials Identification System	WHMIS -Workplace Hazardous Materials Information System
NIOSH-National Institute for Occupational Safety and Health	TSCA-Toxic Substances Control Act
CASRN - Chemical Abstracts Service Registry Number	CERCLA - The Comprehensive Environmental Response, Compensation, and Liability Act
INSHT - National Institute for Health and Safety at Work	IOPC - International Oil Pollution Compensation
LEL - Lower Explosive Limit	NE - Not Established
SARA - Superfund Amendments and Reauthorization Act	UEL - Upper Explosive Limit

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Disclaimer of Warranty : The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet

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