

MATERIAL SAFETY DATA SHEET



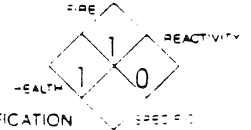
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EMERGENCY TELEPHONE
(24 HOURS)

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HAZARD RATING

4 = EXTREME
3 = HIGH
2 = MODERATE
1 = SLIGHT
0 = INSIGNIFICANT
NFPA HAZARD IDENTIFICATION



I. IDENTIFICATION

PRODUCT NAME PRESTONE® Advanced Formula antifreeze/coolant

TYPE: Inhibited Ethylene Glycol

STOCK #: AF777, AF779

FORMULA #: YA721

SPEC #: PS6777, PS6779

II. PHYSICAL DATA

BOILING POINT, 760 mm Hg, °F	334
FREEZING POINT, °F (33% by vol)	minus 8
DENSITY lbs/gal (at 68°F)	9.4
VAPOR DENSITY (Air = 1)	2.1
VAPOR PRESSURE mm Hg at 68°F	less than 0.1
% VOLATILES BY VOLUME	none
SOLUBILITY IN WATER, % by Wt.	100
EVAPORATION RATE (Butyl Acetate = 1)	less than 1
APPEARANCE AND ODOR:	yellow, mild odor

III. HAZARDOUS INGREDIENTS

<u>MATERIAL</u>	<u>CAS #</u>	<u>PEL/TLV (UNITS)</u>	<u>(SOURCE)</u>
Ethylene Glycol	107-21-1	50 ppm (125 mg/m ³) ceiling, for vapor and mist combined.	ACGIH

None of the ingredients in this product are listed as a carcinogen (or suspected carcinogen) by IARC, NTP or OSHA.

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This sheet is directed to professional users and bulk handlers of the product.
Consumer products are labeled in accordance with Federal Hazardous Substances Act regulations.

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 242°F (117°C) Tag Open Cup
 220°F (104°C) Pensky-Martens Closed Cup

FLAMMABLE LIMITS IN AIR, % BY VOLUME: LOWER: 3.2 (calculated)
 UPPER: 15.3 (estimated)

AUTOIGNITION TEMPERATURE, °C: Not determined

EXTINGUISHING MEDIA:

Apply alcohol type or all-purpose type foams by manufacturers' recommended techniques for large fires. Use water spray, carbon dioxide or dry chemical media for small fires.

SPECIAL FIRE FIGHTING PROCEDURES:

Do not spray pool fires directly. A solid stream of water or foam directed into hot, burning liquid can cause frothing. Use self-contained breathing apparatus and protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None

V. HEALTH HAZARD DATAEFFECTS OF SINGLE OVEREXPOSURE:

SWALLOWING: May cause abdominal discomfort or pain, dizziness, malaise, lumbar pain, oliguria, uremia, and central nervous system depression. Severe kidney damage follows the swallowing of large volumes of ethylene glycol. May be fatal.

SKIN ABSORPTION: No evidence of adverse health effects from available information.

INHALATION: May cause irritation of the nose and throat with headache, particularly from mists. High vapor concentrations caused, for example, by heating the material in an enclosed and poorly ventilated workplace may produce nausea, vomiting, headache, and dizziness.

SKIN CONTACT: No evidence of adverse health effects from available information.

EYE CONTACT: Liquid, vapor, and mist may cause discomfort in the eye with transient conjunctivitis. Serious corneal injury is not anticipated.

EFFECTS OF REPEATED OVEREXPOSURE:

Inhalation of mist may produce signs of central nervous system involvement, particularly dizziness and nystagmus.

OTHER EFFECTS OF OVEREXPOSURE:

Constant use resulting in repeated incidents of skin contact may cause skin sensitization and an associated dermatitis in some individuals.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggest that overexposure is unlikely to aggravate existing medical conditions.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARDS:

Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations. There is, however, no currently available information to suggest that ethylene glycol has caused birth defects in humans. Therefore, ethylene glycol is considered an animal teratogen. Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol causes dose-related increases in tumor incidence. The absence of a carcinogenic potential for ethylene glycol has been supported by numerous in vitro genotoxicity studies showing that it does not produce mutagenic or clastogenic effects.

This product contains less than 0.5% tolyltriazole which has demonstrated mutagenic activity in a bacterial test system. A correlation has been established between mutagenic activity and carcinogenic activity for many chemicals. Tolyltriazole has not been identified as a carcinogen or probable carcinogen by NTP, IARC or OSHA.

EMERGENCY AND FIRST AID PROCEDURES:

- SWALLOWING:** If conscious, drink two glasses of water and induce vomiting.
Call a physician immediately.
- SKIN:** Remove contaminated clothing and flush skin with water.
- INHALATION:** Remove to fresh air. Call a physician if discomfort persists.
- EYES:** Immediately flush with water, and continue washing the eyes for several minutes.

NOTES TO PHYSICIAN:

The principal toxic effects of ethylene glycol, when swallowed, are kidney damage and metabolic acidosis. Ethanol is antidotal, and its early administration may block the formation of nephrotoxic metabolites of ethylene glycol in the liver. Ethanol should be given intravenously, as a 5% solution in sodium bicarbonate, at a rate of about 10 ml ethanol per hour. A desired therapeutic level of ethanol in blood is 100 mg/dl. Hemodialysis may be required. Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. The mechanism of production has not been elucidated, but it appears to be noncardiogenic in origin in several cases. Respiratory support with mechanical ventilation and positive end-expiratory pressure may be required.

VI. REACTIVITY DATA

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

INCOMPATIBILITY (Materials to Avoid):

Normally unreactive; however, avoid strong bases at high temperatures, strong acids, strong oxidizing agents and materials reactive with hydroxyl compounds.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:

Burning may produce carbon monoxide and/or carbon dioxide.

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Wear suitable protective equipment. Small spills should be flushed with large quantities of water. Larger spills should be collected for disposal.

WASTE DISPOSAL METHOD:

Incinerate in a furnace where permitted under appropriate federal, state, or local regulations. At very low concentration in water, ethylene glycol is readily biodegradable in a biological wastewater treatment plant.

VIII. SPECIAL PROTECTION INFORMATION
(for manufacturing and bulk spill cleanup)

RESPIRATORY PROTECTION:

NIOSH approved breathing air equipment or NIOSH approved face mask with organic vapor cartridge and dust or mist pre-filter. (Not for use in fire fighting or in atmosphere with reduced oxygen content).

VENTILATION:

General (mechanical) room ventilation will be adequate if handled at ambient temperatures or in covered equipment. If ambient temperatures are exceeded or operations exist which may produce misting, local exhaust ventilation is needed.

PROTECTIVE GLOVES: Rubber or PVC coated.

EYE PROTECTION: Monogoggles/face shield.

OTHER PROTECTIVE EQUIPMENT: Eye bath and safety shower.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

- Do not drink antifreeze or solution.
- Avoid inhaling vapor or hot mist.
- Do not store in open or unlabelled containers.
- Wash thoroughly after handling.
- Do not cut or weld, on or near empty drums.
- Do not reuse empty drums unless properly cleaned.

OTHER PRECAUTIONS:

Observe all requirements of plant, company or government regulations.

X. DEPARTMENT OF TRANSPORTATION


HAZARDOUS MATERIALS: None
(Proper Shipping Name)

HAZARD CLASSIFICATION: None

IDENTIFICATION NUMBER: None

LABEL(S) REQUIRED: None

DATE OF ISSUE: 6/16/87


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