

U.S. DEPARTMENT OF LABOR  
 OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION  
 MATERIAL SAFETY DATA SHEET

IDENTITY: **FPPF GLYCLEAN RECYCLED ANTIFREEZE COOLANT SOLUTION**

**NOTE: THIS IS A VALID IF THE RECYCLED PRODUCT HAS A p H of 9.5 – 10.5 by the addition of Glyclean and has a freeze point of -34°F.**

<b>SECTION 1 – IDENTIFICATION DATA</b>	
Product Name: Ethylene Glycol Antifreeze Grade 50% Solution V/V	
Chemical Name: Ethylene Glycol-Glyclean Recycled Premixed Ethylene Glycol	
Chemical Family: Glycols	
Formula: C <sub>2</sub> H <sub>6</sub> O <sub>2</sub> /H <sub>2</sub> O (Mixture)	
Synonyms: EG; Glycol; 1,2 – Ethanediol	
CAS #: 107-21-1	1310-73-2
CAS Name: 1,2 Ethanediol Sodium Hydroxide	

<b>SECTION 2 – PHYSICAL DATA (Determined on typical material)</b>	
Boiling Point: 760 mmHg:	200.5°F +/- 10°F
Freezing Point:	-34°F
Specific Gravity (H <sub>2</sub> O = 1):	8.82 +/- 0.5 20/20°C
Vapor Pressure @ 20°C	0.06 mm Hg
Vapor Density (Air = 1)	1.78 +/- 0.2
Solubility in Water by WT:	100
Evaporation Rate (Butyl Acetate = 1):	0.01
Appearance & Odor: Green-Blue color, mild odor	

<b>SECTION 3 – INGREDIENTS</b>					
	CAS #	OSHA PEL	ACGIH TLV	STEL	%
Ethylene Glycol	107-21-1	125 ppm	125 ppm		50-60
Sodium Hydroxide	1310-73-2	120 ppm	120 ppm		1.4-5.4
Diethylene Glycol	111-46-6	None Es-	tablished		0-8

<b>SECTION 4 – FIRE &amp; EXPLOSION HAZARD DATA</b>	
Flash Point: (Test Methods): Not Applicable	
Flammable Limits in Air: (% by volume): Not established	

Extinguishing Media: Apply alcohol-type or all-purpose type foams by manufacturers
Recommended techniques for large fires. Use CO <sub>2</sub> dry chemical media for small fires
Special fire fighting procedure: 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.

GLYCLEAN RECYCLED ANTIFREEZE 1 - 6

**SECTION 5 – HEALTH HAZARD DATA**

**TLV & SOURCE:      SEE SECTION 3**

EFFECT OF SINGLE OVEREXPOSURE:

**Swallowing:** May cause abdominal discomfort or pain, nausea, vomiting, dizziness, malaise, blurring of vision, irritability, lumbar pain, oliguria, uremia and central nervous system effects, including irregular eye movements, convulsions and coma. Cardiac failure and pulmonary edema may develop. Severe kidney damage follows the swallowing of large volumes of ethylene glycol may be fatal. A few reports have been published describing the development of weakness of the facial muscles, diminished hearing and difficulty with swallowing, during the late stages of severe poisoning.

**Skin Absorption:** No evidence of adverse effects from available information.

**Skin Contact:** No evidence of adverse 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 work place, may produce nausea, vomiting, headache, dizziness and irregular eye movements.

**Eye Contact:** **Liquid**, vapor and mist may cause discomfort in the eye with persistent conjunctivitis, seen as slight excess redness of conjunctiva. 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.

**Medical Conditions Aggravated by Overexposure:** The available toxicology information and knowledge 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 Hazard Evaluation:

Ethylene Glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by lavage or in drinking water at high concentrations or doses.

The no-effect dose for developmental toxicity in the mouse receiving ethylene glycol by lavage has been determined to be 150 mg/kg/day over the period of organogenesis. Also, in a preliminary study to assess the effects of exposure of pregnant rats and mice to aerosols at concentrations 150, 1000, and 2500 mg/m<sup>3</sup> for six (6) hours a day throughout the period of organogenesis, teratogenic effects were produced at the highest concentration, but only in mice.

GLYCLEAN RECYCLED ANTIFREEZE 2 – 6

The conditions of these latter experiments did not allow a conclusion as to whether inhalation of aerosol, percutaneous absorption of ethylene glycol from contaminated skin or swallowing of ethylene glycol as a result of grooming the wetted coat mediated the developmental toxicity. In a further study, comparing effects from high aerosol concentration by whole body or nose only exposure, it was shown that nose-only exposure resulted in maternal toxicity (1000 and 2500 mg/m<sup>3</sup>). The no-effects concentration (based on maternal toxicity) was 500 mg/m<sup>3</sup>. Ethylene glycol was applied to the skin of pregnant mice over the period of organogenesis. The above observations suggest that ethylene glycol is to be regarded as an animal teratogen; there is currently no available information to suggest that ethylene glycol has caused birth defects in humans. Coetaneous application of ethylene glycol is ineffective in producing developmental toxicity; exposure to high aerosol concentration is only minimally effective in producing developmental toxicity; the major route for producing developmental toxicity is perorally. Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol causes dose-related increases in tumor incidence, or a different pattern of tumors compared to untreated controls. 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.

**Other Effects of Overexposure:**

Repeated skin contact may, in a very small proportion of cases, cause sensitization with the development of allergic contact dermatitis. The incidence is significantly less than 1% with the undiluted material.

**Emergency & First Aid Procedures:**

Swallowing: If conscious, give two (2) 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 sodium bicarbonate at a rate of about 10ml ethanol per hour. A desired therapeutic level of ethanol in blood is 100 mg/dl. Hemodialysis may be required. 4-Methylpyrazole, a potent inhibitor of alcohol dehydrogenase, has been used therapeutically to decrease the metabolic consequences of ethylene glycol poisoning before coma, seizure, and renal failure have occurred (20 mg/kg/day).

GLYCLEAN RECYCLED ANTIFREEZE 3 - 6

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.

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.

<b>SECTION 6 – REACTIVITY DATA</b>
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Stability: Stable
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Conditions to Avoid: None
Incompatibility (Materials to Avoid): Explosive decomposition may occur if combined
with strong acids or strong bases and subjected to elevated temperatures.
Therefore, avoid strong acids and strong bases at elevated temperatures. Avoid
Contamination with strong oxidizing agents and materials reactive with hydroxyl
Compounds.
Hazardous combustion or Decomposition products: Burning can produce carbon
Monoxide and or carbon dioxide.
Hazardous Polymerization: Will not occur
Conditions to Avoid: None

<b>SECTION 7 – SPILL OR LEAK PROCEDURES</b>
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 a very low concentration in water, Ethylene
Glycol is readily biodegradable in a biological waste water treatment plant.

<b>SECTION 8 – SPECIAL PRECAUTIONS</b>
Precautions to be Taken in Handling & Storage:
<b>DANGER: HARMFUL OR FATAL IF SWALLOWED:</b>

GLYCLEAN RECYCLED ANTIFREEZE 4 - 6

<b>SECTION 8 – SPECIAL PRECAUTIONS CON'T.</b>
➤ Prolonged or repeated breathing of mist or vapor harmful.

- Causes eye irritation.
- May cause kidney and nervous system damage.
- Causes birth defects in laboratory animals.
- Do not swallow.
- Do not breathe mist from spray.
- Avoid prolonged or repeated breathing of vapor.
- Avoid contact with eyes.
- Keep container closed.
- Use with adequate ventilation.
- Wash thoroughly after handling.

**For Industrial Use Only.**

Other precautions: None known.

### SECTION 9 – REGULATORY INFORMATION

Status on Substance Lists: The concentrations shown are maximum or ceiling levels (weight - %) to be used for calculations for regulations. Trade Secrets are indicated by "TS".

Federal EPA: Comprehensive Environmental Response, compensation, and Liability Act of 1980 (CERCLA) requires notification of the Natl. Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQ's) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are: Chemical: Dioxane; CAS # 123-91-1; Upper Bound Concentration (%): .0004.

Superfunds Amendments & Reauthorization Act of 1986 (SARA/Title III): Requires emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQ's) in 40 CFR 355 (Used for SARA 302, 304,311 and 31200) Components present in this product at this level which could require reporting under the statute are: **\*\*NONE\*\***.

Superfund Amendments & Reauthorization Act of 1986 (SARA Title III):

Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDS's that are copied and distributed for this material. Components present in this product are:

Chemical:	CAS #:
Ethylene Glycol	107-21-1

Sodium	1310-733-2
Upper Bound Concentration % 70.0=5.4	

GLYCLEAN RECYCLED ANTIFREEZE 5 – 6

State “Right to Know”:

*California Proposition 65:*

This product contains trace levels of Dioxane that the State of California has found to cause cancer, birth defects or other reproductive harm.

State “Right to Know”:

*Massachusetts:*

Right to Know. Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products. Components present in this product at a level that could require reporting under the statute are:

Chemical	CAS #	Upper Bound Concentration (%)
Dioxane	123-91-1	.0004
Methanol	67-56-1	.0024
Ethylene Glycol	107-21-1	92.0
Sodium Hydroxide	1310-73-2	5.4

Hazardous Substances (=>1%)

State “Right to Know”:

*Pennsylvania:*

Right to Know. Hazardous Substance List Hazardous Substances and Special Hazardous Substances on the MSL must be identified when present in products.

Components present in this product at a level that could require reporting under the statute are:

Chemical	CAS #	Upper Bound Concentration (%)
Ethylene Glycol	107-21-1	92.00
Diethylene Glycol	111-46-6	8.00
Sodium Hydroxide	1310-73-2	5.4

Toxic Substances Control Act (TSCA) Status:

The ingredients of this product are on the TSCA Inventory.

California SSCAQMD Rule 443.1 VOC's: Not presently available.

FPPF CHEMICAL COMPANY, INC.

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GLYCLEAN RECYCLED ANTIFREEZE 6-6