

MATERIAL SAFETY DATA SHEET



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Product Trade Name: **MAXSAFE AUTOMOTIVE GREEN 50/50 ANTI-FREEZE**

Revision Date: 9-97

Description: Ethylene glycol solution

NFPA 704M/HMIS Rating:

Health: 2/2 Flammability: 1/1 Reactivity: 0/0 Other: 0

0=Insignificant 1= Slight 2= Moderate 3=High 4= Extreme

Section 1- Hazardous Ingredients

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910 1200. Consult section 13 for the nature of the hazard(s).

Ingredients: Ethylene glycol

CAS # 107-21-1

Approx. % 50%

Section 2- Precautionary Label Information

Danger:

Harmful or fatal if swallowed. Ethylene glycol causes birth defects in laboratory animals.

Prolonged or repeated breathing of vapor or mists may be harmful. Causes eye irritation. Do not get in eyes. Avoid breathing vapor or mists. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

Section 3- First Aid Information

Eyes: Flush with water for 15 minutes. Call a Physician.

Skin: Flush with water for 15 minutes

Ingestion: Induce vomiting. Give water Call a Physician at once.

Note to Physician: No specific antidote is known. Based on the individual reactions of the patient, the Physicians judgment should be used to control symptoms and clinical condition.

Caution: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

Section 4 - Health Effects Information

Primary Route(s) Of Exposure: Eye, Skin, Inhalation.

Eye Contact: Can cause moderate irritation. Vapors may be irritating.

Skin Contact: Can cause irritation with prolonged contact.

Ingestion: Can be harmful or fatal. Three or four ounces of ethylene glycol may be fatal to humans. May cause kidney malfunction and central nervous system depression.

Inhalation: Prolonged inhalation of vapor may be harmful.

Symptoms of Exposure

Acute: Inhalation of high concentrations of ethylene glycol can cause giddiness, headaches, dizziness, vomiting, nausea, stupor or unconsciousness. Kidney damage may be noted by changes in urinary output. Liver damage may be noticed by yellow skin color.

Aggravation of Existing Conditions:

Individuals with pre-existing kidney or liver damage may experience a worsening of effects from ethylene glycol ingestion.

SECTION 5-TOXICOLOGY INFORMATION

Acute Toxicity Studies: Acute toxicity studies have not been conducted on this product, but toxicity studies of the ingredient(s) in Section 1 have been reviewed. The results are shown below.

Acute Oral Toxicity (Albino Rats): Ethylene glycol LD50=6 g/kg.

Acute Dermal Toxicity (Albino Rabbits): Ethylene glycol LD50=9.5 ml/kg

Acute Inhalation Toxicity (Albino Rats): Ethylene glycol LC50=0/8 deaths after 8 hours exposure in saturated air.

Other Toxicity Results: Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when administered by

gavage or in drinking water at high concentrations.

Chronic Toxicity Results: Ethylene glycol: Two chronic feeding studies, using rats and mice, have not shown any evidence that the chemical 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.

SECTION 6-PHYSICAL AND CHEMICAL PROPERTIES

Color:	Clear pale green.	
Form:	Liquid.	
Odor:	Aromatic	
Density;	8.82 lbs./gal	
Solubility in Water	Completely soluble.	
Specific Gravity:	1.05-1.07 @ 73 Degrees F.	ASTM D-1298
PH (NEAT)	10.8	ASTM E-70
Viscosity:	10 cps @73 Degrees F.	ASTM D-2983
Freeze Point:	-34 Degrees F.	ASTM D-1177
Flash Point:	None (PMCC)	ASTM D-93
Note:	These physical properties are typical values for this product	

SECTION 7- FIRE AND EXPLOSION INFORMATION

Flash Point:	Greater than 261 F (PMCC)	ASTM D-93
Extinguishing Media:	Based on NFPA guide, use dry chemical, alcohol foam, carbon dioxide or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For large fires, use water spray or fog thoroughly drenching the burning material.	

SECTION 8-REACTIVITY INFORMATION

Incompatibility:	Avoid contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.
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Thermal Decomposition Products:	In the event of combustion CO, CO ₂ may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.
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SECTION 9-PERSONAL PROTECTION EQUIPMENT

Respiratory Protection:	Respiratory protection is not normally needed. If significant mists or aerosols are generated, wear a NIOSH approved or equivalent respirator (ANSI Z 88.2, 1980 for requirements and selection).
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SECTION 10- SPILL AND DISPOSAL INFORMATION

Disposal: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristic of Subpart C (i.e. D001 through D017) nor is it listed under Subpart D. As a non-hazardous liquid waste, it should be solidified before disposal to a sanitary landfill. Can be incinerated in accordance with local, state and federal regulation.

SECTION 11-ENVIRONMENTAL INFORMATION

If released into the environment, see CERLA in Section 13.

SECTION 12-TRANSPORTATION INFORMATION

Dot Proper Shipping Name/
Hazard Code: Product is not regulated during transportation

SECTION 13-REGULATORY INFORMATION

The following regulations apply to this product

FEDERAL REGULATIONS

OSHA'S Hazard Communication rule, 29 CFR 1910. 1200:
Based on our hazard evaluation, the following is hazardous and the reason is shown below.

Ethylene glycol-systemic effects, possible birth defects based on tests with laboratory animals.

Ethylene glycol (vapor)= TWA 50 PPM, 125 mg/m³ (ceiling) ACGIH/TLV

Toxic Substances Control Act (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

Resource Conservation and Recovery Act (RCRA), 40 CFR 261 Subpart C & D:
If this product becomes a waste, it does not meet the criteria of a hazardous waste.

Federal Water Pollution Control Act, Clean Water Act, 40 CER 401.15 (Formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):

This product contains the following ingredients covered by The Clean Water Act:

Sodium nitrite-Section 311

Clean Air Act, 40 CFR 60, Section 211, 40 CFR 61, Section 112:

This product contains the following ingredients covered by the Clean Air Act:

Ethylene glycol-Section 111

STATE REGULATIONS

California Proposition 65: None of the chemicals on the current Proposition 65 list are known to be present in this product.

Michigan Critical Materials: This product does not contain ingredients listed on the Michigan Critical Materials Register.

Slate Right to Know Laws: Regulated in those states using the TLV for ethylene glycol as a criterion for listing.

CERCLA. 40 CFR 117,302:

This product contains sodium nitrite, a Reportable Quantity (HQ) substance and if 38,000 pounds of product are released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D.C. (1-800-424-8802)

SARA/SUPERFUND AMENDMENTS and REAUTHORIZATION ACT of 1986 (TITLE 111)- Sections 302,311, 312, and 313:

SECTION 302-EXTREMELY HAZARDOUS SUBSTANCES (40 JR 355);

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 AND 312- MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370);

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories

XX Delayed (chronic) health hazard

- - Fire Hazard
- - Sudden release of pressure hazard
- - Reactive hazard

Under Section 311, submittal of MSDS'S or a list of product names to the local emergency planning commission, state emergency response commission and local fire department is required after October 17, 1987 if you have:

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

After October 17, 1989, MSDS(s), or a list of product names for all hazardous substances between zero (o) and 10,000 pounds, not previously reported, must be submitted.

SECTION 313-LIST OF TOXIC CHEMICALS (40 CFR 372);

This product contains the following ingredient(s) (with CAS # and % range) which appear(s) on the List of Toxic Chemicals:

Ethylene glycol 107-21-1 40+

SECTION 14-USER'S RESPONSIBILITY

This product Material Safety Data Sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training program can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855,1983.

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CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N.H., and Hughes, J.P., eds., J.P. Lipincolt Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, Geneva World Health Organization, International Agency for Research on Cancer, 1972-1977.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G.D., Clayton, F.E.,eds, John Wiley and Sons, N.Y.,3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.