



MATERIAL SAFETY DATA SHEET

Prepared in accordance with
OSHA Hazard Communication Standard 29 CFR 1910.1200

Manufacturer's Name: Environmental Specialists Inc.
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Date of Preparation: December 18, 2008

Emergency Telephone Number
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SECTION 1: PRODUCT IDENTIFICATION

Product Name: Anti-Freeze **Synonym:** Inhibited Ethylene Glycol and Water Solution
Product Number: AF-50 **Formula:** Ethylene Glycol Based Antifreeze

SECTION 2: COMPOSITION INFORMATION

Components	CAS Number	Weight %
1,2 – Ethanediol (Ethylene Glycol)	107-21-1	51.0 – 51.5%

SECTION 3: HAZARDS IDENTIFICATION

Eye Contact: May cause mild eye irritation experienced by temporary discomfort.

Skin: Brief contact with the skin may not be irritating. Prolonged contact may cause defatting of the skin or irritation.

Ingestion: This material contains ethylene glycol and/or diethylene glycol, which are toxic when swallowed. Initial symptoms in massive dosage parallel alcohol intoxication, progressing to CNS depression, vomiting, headache, rapid respiratory and heart rate, lowered blood pressure, stupor, collapse, and unconsciousness with convulsions. Death from respiratory arrest or cardiovascular collapse may follow.

Inhalation: Vapor or mist, in excess of permissible concentrations, or in unusually high concentrations generated from spraying, heating, or poor ventilation, may cause irritation or the nose and throat, headache, nausea, and drowsiness. Prolonged or repeated overexposure may result in the absorption of potentially harmful amounts of materials.

Medical Conditions Aggravated: Persons with pre-existing skin disorders, eye problems, or impaired liver, kidney, or respiratory function may be more susceptible to the effects of this substance.

Chronic: Repeated small exposures by any route can cause severe kidney problems. Brain damage may also occur. Skin allergy can develop. May damage the developing fetus.



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SECTION 4: FIRST AID MEASURES

- Eye Contact:** Flush eye immediately with fresh water for 15 minutes. Remove contact lenses if worn. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical attention.
- Skin:** Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
- Ingestion:** Seek immediate medical attention. Immediately call local poison control center or go to an emergency department. Never give anything by mouth to or induce vomiting in an unconscious or drowsy person.
- Inhalation:** Remove the victim to fresh air. If breathing has stopped administer artificial respiration. If breathing is difficult, have medical personnel administer oxygen. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Flammable Properties:

Flash Point: Not Available

Flammable Limits: LEL – Not Determined UEL – Not Determined

Autoignition: Does not apply

Hazardous Combustion Products: Carbon dioxide, carbon monoxide, unidentified organic compounds. Decomposition and combustion materials may be toxic.

Extinguishing Media: Use dry chemical, carbon dioxide, water spray, or foam to extinguish all fires.

Fire Fighting Instructions: Water or foam may cause frothing. Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases.

Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Toxic gases and vapors may be released if involved in a fire.

Fire and Explosion Hazards: Containers may explode when involved in a fire.



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SECTION 6: ACCIDENTAL RELEASE MEASURES

- Protective Measures:** Do not touch or walk through spilled product. Keep non-essential and unprotected personnel from entering the area. If spill occurs indoors, ventilate area and avoid breathing vapors or mist. A vapor suppressing foam may be used to reduce vapors.
- Spill Management:** Stop the source of the release if it can be done without risk. Contain release to prevent further contamination of soil, surface water or groundwater. DO NOT flush down public sewers or other drainage systems. Place contaminated materials in appropriate containers and dispose of in accordance with local, state, and federal regulations. Store in a cool, dry, well-ventilated area away from heat, sources of ignition and incompatibles.
- Spill Reporting:** If more than 10,000 pounds of AF-50 is spilled, then report the spill in accordance with SARA 304 and/or CERCLA requirements, unless the product qualifies for the petroleum exception.

SECTION 7: HANDLING AND STORAGE

- Handling:** DANGER: Harmful or Fatal if Swallowed. Do not drink antifreeze or solution. Avoid eye and prolonged or repeated skin contact. Avoid breathing vapors or mists. Wash exposed skin thoroughly with soap and water after use.
- Storage:** Do not store in opened or unlabeled containers. Keep container away from open flames and excessive heat. Do not reuse empty containers unless properly cleaned. Empty containers retain product residue and may be dangerous.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

- Engineering Controls:** Use in a well-ventilated area. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). Have an eye wash station readily available where eye contact can occur.
- Personal Protective Equipment:** Personal protective equipment (PPE) selections vary based on the potential exposure conditions such as handling practices, concentration and ventilation. At a minimum safety glasses and skin protection should be worn. Additional PPE may be required based on specific working conditions.
- Eye Protection:**  Safety glasses equipped with side shields are recommended for minimal protection. Wear goggles if splashing or spraying for added protection in the event splashing or spraying is expected.
- Hand Protection:**  Gloves should be nitrile, neoprene, Viton, or equivalent protection.



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Skin Protection:



Uniforms or coveralls should provide adequate protection under normal working conditions. If prolonged contact is unavoidable, wear protective clothing made of rubber, neoprene, or nitrile. Remove contaminated clothing and launder before reuse. Heavily contaminate clothing and leather goods should be removed promptly and cleaned or discarded.

Respiratory Protection:



For operations where the TLV is exceeded a NIOSH approved respirator with organic vapor cartridges and dust/mist pre-filters or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration. Select and use in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Occupational Exposure Guidelines:

Substance	Applicable Workplace Exposure Levels	
	ACGIH	OSHA
Ethylene glycol	TWA: None	TWA: None

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Color:	Clear, colorless	Physical State:	Liquid
Odor:	Mild sweet odor	Vapor Pressure:	18.0 mmHg @ 68° F (20° C)
pH:	8.8 – 10.0	Vapor Density	1.8 (Air = 1)
Boiling Point:	325° F (162° C)	Solubility:	Soluble in water
Flash Point:	None detected	Specific Gravity:	1.110 – 1.125 g/ml (H ₂ O = 1)

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Not expected to occur.
Conditions to Avoid:	Keep away from extreme heat above 775° F (413° C).
Incompatibility with Other Materials:	May react with strong oxidizing agents.
Hazardous Decomposition Products:	No additional hazardous decomposition products other than those identified in Section 5 of this MSDS.



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SECTION 11: TOXICOLOGICAL INFORMATION

Acute Symptoms of Exposure:

- Inhalation:** High concentrations of aerosol or mist may be generated at high temperatures and may be irritating to the respiratory tract, including nose and throat, and may cause difficulty breathing. This may be particularly true with people who have a high level of sensitivity and allergic reactions.
- Ingestion:** May cause mild irritation of the digestive tract, including cramping, diarrhea, nausea, and vomiting. Aspiration into the lungs – by initial ingestion or vomiting – may cause mild to severe pulmonary injury.
- Skin:** Prolongs and/or repeated exposure may cause mild skin irritation, including redness, burning, temporary drying/cracking, and acute dermatitis. Contact with hot material may cause burns.
- Eyes:** Contact may cause slight to moderate irritation, including burning, redness, and tearing. Contact with hot oil may cause thermal burns.

Chronic Symptoms of Exposure:

- Inhalation:** Exposure to high levels of mist may lead to chronic pulmonary conditions such as chronic bronchitis, pneumonia, and emphysema.
- Skin:** Cracking, drying, and chronic dermatitis.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

Environmental Fate

This material is expected to be readily biodegradable.

SECTION 13: DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Contact your ESI representative regarding proper recycling or disposal.



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SECTION 14: TRANSPORTATION INFORMATION

US DOT Status: **Shipping Name:** Not Applicable
UN/NA #: Not Applicable
Hazard Class: Not Applicable
Packing Group: Not Applicable
Required Placards: Not Applicable
Emergency Response Guide #: Not Applicable

SECTION 15: REGULATORY INFORMATION

TSCA Inventory Components of this material are exempt from the requirements of the Toxic Substances Control Act Inventory.

SARA 302/304 Emergency Planning and Notification The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355.

There are no components in this product on the SARA 302 list.

SARA 311/312 Hazard Identification The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 311 and 312 to submit aggregate information on chemical by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories:

Immediate (Acute) Health Effects:	Yes
Delayed (Chronic) Health Effects:	Yes
Fire Hazard:	No
Sudden Release of Pressure Hazard:	No
Reactivity Hazard:	No

SARA 313 Toxic Chemical Notification and Release Reporting This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):

Ethylene Glycol 107-21-1 80-95% (glycol ethers)

CERCLA Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for Ethylene Glycol (95% maximum) is 5,000 lbs.

Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.



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SECTION 16: OTHER INFORMATION

NFPA Ratings: Health: 2 Flammability: 1 Reactivity: 0

HMIS Ratings: Health: 2 Flammability: 1 Reactivity: 0

0 – Least, 1 – Slight, 2 – Moderate, 3 – High, 4 – Extreme

These values are obtained using the guidelines or published evaluations by the National Fire Protection Association (NFPA) of the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION: AF-50 ANTI-FREEZE

NOTICE: The information herein is based on data considered to be accurate at date of preparation. No warranty is made as to the accuracy or completeness of the foregoing data and safety information. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.