

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Identifiers

Product name: Thermal-Guard Heat Transfer Fluid 50%
Product Number: HT-1 50%
Chemical Name & Synonyms: Inhibited Ethylene Glycol 50%
Product Application: Heat Transfer Fluid without possibility of food contact
Emergency telephone number: CHEMTREC (800) 424-9300 Poison Control: 1-800-222-1222

SECTION 2 – HAZARD IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Signal Word: **WARNING**

Pictograms: Health Hazard, Irritant

Physical Hazards: None

Health Hazards: Acute Toxicity Category 4
Specific Target Organ Toxicity – Repeated Exposure Category 2
Toxic to Reproduction Category 2
Eye Damage/Irritation None



Environmental Hazards: None known

Hazard Statements

H302 Harmful if swallowed.
H361d Suspected of damaging the unborn child.
H373 May cause damage to kidneys through prolonged or repeated exposure.

Precautionary Statements

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist or vapors.
P264 Wash exposed skin thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P281 Use personal protective equipment as required.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.
P330 Rinse mouth.
P308 + P313 IF exposed or concerned: Get medical advice.

Disposal:

P405 Store locked up.
P501 Dispose of contents and container in accordance with local and national regulations.

HNOC: HMIS Rating: Health hazard: 1 Chronic Health Hazard: 1 Flammability: 1 Physical Hazard 0
NFPA Rating: Health hazard: 1 Fire Hazard: 2 Reactivity Hazard: 0
* Hazards not otherwise classified (HNOC) or not covered by GHS.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredient | CAS | Wt% |
|-----------------|----------|--------|
| Ethylene Glycol | 107-21-1 | 48-53% |

SECTION 4 – FIRST AID MEASURES

Description of first aid measures

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of contaminated area.

If inhaled:

P304/P312 IF INHALED: Call a POISON CENTER or physician if you feel unwell.

Skin contact:

P353 Rinse skin with water/shower

P332 If skin irritation occurs: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water.

P363 Wash contaminated clothing before reuse.

Eye contact:

P305/P351/P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P337/P313 If eye irritation persists: get medical advice/attention.

If swallowed:

P301/P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor

P301/P330/P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed: May cause eye irritation. Inhalation of mists may cause nose and throat irritation and may affect nervous system. Ingestion may cause abdominal discomfort / pain, nausea, vomiting, dizziness, drowsiness, blurred vision, kidney and liver dysfunction/failure, and may affect central nervous system.

Indication of any immediate medical attention and special treatment needed: Seek immediate medical attention if a large amount is ingested.

Note to Physician: The principal toxic effects of ethylene glycol, when swallowed, are kidney damage and metabolic acidosis. The combination of metabolic acidosis, an osmol gap and oxalate crystals in the urine is evidence of ethylene glycol poisoning. Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. Respiratory support with mechanical ventilation 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.

Ethanol is antidotal and its early administration may block the formation of nephrotoxic metabolites of ethylene glycol in the liver. The objective is to rapidly achieve and maintain a blood ethanol level of approximately 100 mg/dl by giving a loading dose of ethanol followed by a maintenance dose. Intravenous administration of ethanol is the preferred route. Ethanol blood levels should be checked frequently. Hemodialysis may be required. 4-Methyl pyrazole (Fomepizole(R)), a potent inhibitor of alcohol dehydrogenase, has been used therapeutically to decrease the metabolic consequences of ethylene glycol poisoning.

Fomepizole is easier to use clinically than ethanol, does not cause CNS depression or hypoglycemia and requires less monitoring than ethanol. Additional therapeutic modalities which may decrease the adverse consequences of ethylene glycol metabolism are the administration of both thiamine and pyridoxine. As there are complicated and serious overdoses, we recommend you consult with the toxicologists at your poison control center.

The principal toxic effects of sodium nitrite poisoning are vasodilation and/or methemoglobinemia. Hypotension with syncope and tachycardia are common findings. Coronary vasospasm due to acute withdrawal may be seen. Paradoxical bradycardia may occur rarely. Coronary ischemia and cerebrovascular disease can occur due to severe hypotension. Immediate life support measures should be provided because of associated hypotension, seizures, and methemoglobinemia-induced anoxia.

Immediately contact a poison center or hospital emergency department for treatment advice.

SECTION 5 – FIREFIGHTING MEASURES

Flammable Properties: Non-Flammable

Explosive Properties: N/A

Suitable Extinguishing media: N/A

Unsuitable extinguishing media: N/A

Special hazards arising from the substance or mixture: Overheating in fire conditions may produce oxides of carbon.

Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Further information: If employees are expected to fight fires, they must be trained and equipped as stated in the OSHA Fire Brigades Standard (29 CFR 1910.156).

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Wear respiratory protection. Avoid dust formation. Avoid breathing vapor, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see Section 8.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up: Keep in suitable, closed containers for disposal.

Reference to other sections: For disposal see Section 13.

Product is water soluble and may be diluted and flushed as below described.

Other Information: This product is intended to be used in the treatment of hydronic water loops, and discharged to sanitary sewer in its working concentration. Concentrated product may be diluted to a similar working concentration and flushed to sewer, or soaked up with absorbent material and landfilled in accordance with local, state, and federal regulations.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with skin and eyes. Avoid formation of aerosols. Provide appropriate exhaust ventilation. For precautions see Section 2.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place.

Note: Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without any obvious ignition sources. Published "autoignition" or "ignition" temperatures cannot be treated as safe

operating temperatures in chemical processes without analysis of the actual process conditions. Use of this product in elevated temperature applications should be thoroughly evaluated to assure safe operating conditions.

SECTION 8 – EXPOSURE CONTROL AND PERSONAL PROTECTION

Control parameters

Components with workplace control parameters:

Ethylene Glycol ACGIH TLV: 100 mg / m³ Ceiling

Exposure controls

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment:

Eye/face protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Handle with neoprene or PVC gloves. Gloves must be inspected prior to use.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls.

Control of environmental exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear pink viscous liquid with slight sweet organic odor

pH: 10.5

Specific Gravity: 1.120

Molecular Weight: Mixture

Water Solubility: Completely Miscible

Melt/Freeze Point: -37 C / -34 F

Boiling Point: 108 C / 226 F

Flammability: Not Flammable

Flash Point: N/A

Vapor Density: NA

Note: Physical Data is typical values based on material tested, but may vary based on composition. Values should not be accepted as guaranteed for every lot or as specifications for this product.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: Normally unreactive

Chemical stability: Stable under normal conditions of use and storage

Possibility of hazardous reactions: Contact with strong oxidizers will generate heat.

Conditions to avoid: None known

Incompatible materials: Strong acids, bases, oxidizers, materials reactive with hydroxyl compounds.

Hazardous decomposition products: Carbon monoxide, carbon dioxide.

SECTION 11 – TOXICOLOGICAL INFORMATION

Information on toxicological effects: Acute toxicity LC50 Oral – Rat 4,700 mg/kg.
LC50 Skin – Rabbit 9,530 mg/kg

Inhalation: No data available

Skin corrosion/irritation: No data available

Serious eye damage/eye irritation: No data available

Respiratory or skin sensitization: No data available

Germ cell mutagenicity: No data available

Carcinogenicity: IARC, ACGIH, NTP, and OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available

Specific target organ toxicity - single exposure: No data available

Specific target organ toxicity - repeated exposure: No data available

Aspiration hazard: No data available

Additional Information: None.

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity:

| | | |
|------------------|----------------------|----------------------|
| Ethylene Glycol: | LC 50 Fathead Minnow | >10,000 mg/L / 96 hr |
| | EC50 Daphnia Magna | 100,000 mg/L / 48 hr |
| | LC50 Green Algae | >10,000 mg/L |

Persistence and degradability: Ethylene glycol will degrade 79-100% in 2-12 days.

Bioaccumulative potential: BCF of '10' (low), reported in *Leuciscus idus menanotus* after three days exposure

Mobility in soil: No data available. Product is water soluble, so will likely move within the aquifer.

Other adverse effects: Harmful to aquatic life.

SECTION 13 – DISPOSAL CONSIDERATION

Waste treatment methods:

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging: Dispose of as unused product.

SECTION 14 – TRANSPORT INFORMATION (USDOT)

Proper shipping Name: *Inhibited Ethylene Glycol

Hazard Class: *Non-Hazardous

UN/ID No *None

Packing Group *None

Reportable Quantity (RQ) 10,000 lbs

Description: N/A

***NOTE:** IF a shipment of a reportable quantity (>10,000 lbs) in a single package (such as a tanker) is involved, the following information applies:

Proper shipping name: RQ, Environmentally hazardous substance, liquid, N.O.S.
(Contains Ethylene Glycol)

Hazard Class: 9

UN/ID No. 3082

Packing Group: III

SECTION 15 – REGULATORY INFORMATION

TSCA (Toxic Substance Control Act): Ethylene Glycol (CAS #107-21-1) is listed.

CERCLA: (Comprehensive Emergency Response Compensation, and Liability Act)(40 CFR 302.4): Spills over 10,000 lbs must be reported.

RCRA: (Resource Conservation/Recovery Act): Not regulated

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: Ethylene Glycol (CAS #107-21-1)

SARA 311/312 Hazards: Acute Health, Chronic Health

California Prop. 65 Components: This product in normal use does not result in exposure to any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16 – OTHER INFORMATION

Fire Protection Association (NFPA) Ratings:



NSF Certification: N/A

This Safety Data Sheet compiled from information provided by the raw chemical product manufacturers.

Disclaimer: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. However, no warranty or representation, expressed or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by the vendor for any damage or injury resulting from abnormal use, from failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.