

return of  
plate exchanger

## MATERIAL SAFETY DATA SHEET

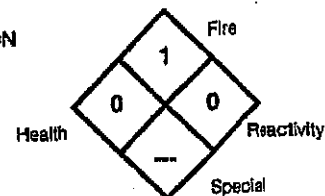


GREAT WESTERN CHEMICAL COMPANY

ISSUE DATE: 10/10/97

SUPERSEDES: 05/02/95

GREAT WESTERN MSDS NUMBER: 65570

NFPA 704 DESIGNATION  
HAZARD RATING4 = Extreme  
3 = High  
2 = Moderate  
1 = Slight  
0 = Insignificant

## 1. CHEMICAL PRODUCT IDENTIFICATION &amp; COMPANY IDENTIFICATION

PRODUCT IDENTIFIER: ARCTIC THERM P-50

GENERAL USE: A corrosion inhibitor for aqueous heat exchange systems.

PRODUCT DESCRIPTION: An inhibited propylene glycol solution. Synonyms for propylene glycol include: 1,2-dihydroxypropane; methylethylene glycol; methyl glycol; 1,2-propanediol; and 1,2-propylene glycol.

INFORMATION PROVIDED BY: GREAT WESTERN CHEMICAL COMPANY  
Corporate Office  
808 S.W. 15th Avenue  
Portland, OR 97205  
PHONE: 503-228-2600 FAX: 503-221-5767

## EMERGENCY PHONE NUMBERS

GREAT WESTERN: 800-497-7455  
CHEMTREC: 800-424-9300  
CANUTEC: 613-996-6666

## 2. COMPOSITION &amp; INFORMATION ON INGREDIENTS

COMPONENT	CAS #	OSHA HAZARD	WL%	ACGIH		OSHA	
				TLV (TWA)	STEL	PEL (TWA)	STEL
Propylene Glycol	000057-65-6	Eye and Skin Irritant	50 ± 3	N/A	N/A	N/A	N/A

N/A = Not Applicable

## 3. HAZARDS IDENTIFICATION

## EMERGENCY OVERVIEW:

A clear, fluorescent yellow-green liquid with a mild organic odor. Vapors, mists, and liquid are mildly irritating to eyes and skin. Ingestion may cause gastrointestinal discomfort.

## POTENTIAL HEALTH EFFECTS:

INHALATION: No significant adverse effects have been reported from inhalation.

EYE CONTACT: Direct contact with the eyes may cause transient eye redness if left in the eye for an extended period of time. Exposure is not expected to cause corneal damage or visual impairment.

SKIN CONTACT: Direct contact with skin may cause transient redness if left on the skin for an extended period of time. No published reports indicate this product is absorbed through the skin.

INGESTION: Ingestion may cause mild irritation to the gastrointestinal tract. Symptoms of exposure may include: nausea, vomiting, lethargy or diarrhea.

CHRONIC: No chronic health effects have been reported for prolonged or repeated exposure to this product.

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**4. FIRST AID MEASURES**

**INHALATION:** If inhaled, and breathing is difficult, immediately move to fresh air. If symptoms persist, call a physician.

**EYE CONTACT:** In case of contact, immediately flush eyes with plenty of clean running water for at least 15 minutes, lifting the upper and lower lids occasionally. Remove contact lenses, if worn. Get medical attention if irritation persists.

**SKIN CONTACT:** In case of contact, flush skin with plenty of clean running water. Remove contaminated clothing and shoes. If irritation occurs and persists, get medical attention.

**INGESTION:** If swallowed, give plenty of water to drink. Call a physician. **DO NOT** induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

**NOTE TO PHYSICIANS:** Treat symptomatically.

**5. FIRE FIGHTING MEASURES**

**Flashpoint and Method:** Product does not flash.

**Flammable Limits (in air, % by volume):** Lower: Not applicable Upper: Not applicable

**Autoignition Temperature:** Not applicable

**GENERAL HAZARD:** The Uniform Fire Code physical hazard rating for this product is: **Class III-B Combustible Liquid**. This product is not a combustible liquid per OSHA or WHMIS criteria, but will ignite at elevated temperatures and will burn. Product may produce hazardous fumes or hazardous decomposition products.

**FIRE FIGHTING INSTRUCTIONS:** **EXTINGUISHING MEDIA:** CO<sub>2</sub>, dry chemical, foam, or water fog.  
Use water to cool containers exposed to fire.

**FIRE FIGHTING EQUIPMENT:** Fire fighters should wear full protective equipment, including self-contained breathing apparatus.

**HAZARDOUS COMBUSTION PRODUCTS:** When heated to thermal decomposition, this product may emit toxic oxides of carbon.

**6. ACCIDENTAL RELEASE MEASURES**

**LAND SPILL:** Wearing recommended protective equipment and clothing, dike spill using soil, sand, or compatible commercial absorbent. Pick up bulk of liquid using pumps or vacuum truck for potential recovery and return to appropriate container. Absorb remaining liquid using sand or commercial absorbent; dispose as non-hazardous solid waste. Flush spill area with water; collect rinsates for disposal or sewer, as appropriate.

**WATER SPILL:** Wear protective equipment and clothing if contact with hazardous material can occur. Stop or divert water flow. Dike contaminated water and remove for disposal and/or treatment. As appropriate, notify all downstream users of possible contamination.

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**7. HANDLING AND STORAGE****STORAGE TEMPERATURE:** Ambient**STORAGE PRESSURE:** Ambient

**GENERAL:** Store in a cool, dry area away from all sources of ignition and incompatible material. Avoid breathing vapors, mists, or aerosols. Use only with adequate ventilation. Protect eyes, skin, and clothing from contact with product. Wear recommended protective equipment. Wash hands thoroughly after handling.

Empty containers may be hazardous. They may contain organic residues that can be ignited and will burn. Do not cut, puncture, or weld, on or near empty containers.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**CONTROL MEASURES:** Use of local mechanical exhaust ventilation is recommended if vapors, mists, or aerosols are generated, or if discomfort is experienced.

**RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT:**

**RESPIRATOR:** Respiratory protection is not normally required. If use creates vapors, mists or aerosols, use of a NIOSH-approved respiratory with a dust/mist cartridge is recommended.

**EYES:** Wear chemical goggles (recommended by ANSI Z87.1-1979).

**GLOVES:** Neoprene or butyl rubber gloves.

**CLOTHING & EQUIPMENT:** Wear a neoprene or butyl rubber apron when handling product. An eye wash station and safety shower should be available in the work area.

**FOOTWEAR:** Neoprene or butyl rubber boots.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Clear, fluorescent, yellow-green	<b>Bulk Density (pounds/m<sup>3</sup>):</b>	Not applicable
<b>Physical State:</b>	Liquid	<b>Vapor Pressure:</b>	0.2 mm Hg @ 20 °C (100%)
<b>Odor:</b>	Mild organic	<b>Vapor Density (air=1):</b>	2.62 (100%)
<b>Odor Threshold:</b>	No data available	<b>Evaporation Rate (n-Butyl Acetate=1):</b>	No data available
<b>Molecular Formula:</b>	CH <sub>3</sub> CH(OH)CH <sub>2</sub> OH (in water)	<b>VOC Content:</b>	Approximately 520 grams/liter
<b>Molecular Weight:</b>	76.10 (in water)	<b>% Volatile:</b>	100
<b>Boiling Point:</b>	Greater than 100 °C (212 °F)	<b>Solubility in H<sub>2</sub>O:</b>	Complete
<b>Freezing/Melting Point:</b>	Less than -40 °C (-40 °F)	<b>Octanol/Water Partition Coefficient:</b>	No data available
<b>Specific Gravity:</b>	Approximately 1.040 @ 20 °C	<b>pH (as is):</b>	10.5 - 11.0
<b>Density (pounds/gallon):</b>	Approximately 8.67	<b>pH (1% solution):</b>	10.0 - 10.5

**10. STABILITY AND REACTIVITY**

**GENERAL:** This product is stable and hazardous polymerization will not occur.

**CONDITIONS TO AVOID:** None known.

**INCOMPATIBLE MATERIAL:** Strong oxidizing agents and materials reactive with hydroxyl compounds.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Thermal decomposition of this product may produce toxic oxides of carbon.

**SENSITIVITY TO MECHANICAL IMPACT:** This product is not sensitive to mechanical impact.

**SENSITIVITY TO STATIC DISCHARGE:** This product is not sensitive to static discharge.

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**11. TOXICOLOGICAL INFORMATION**

**Components:** Propylene Glycol  
**Eye Contact:** Rabbit: 500 mg/24 hours; MILD  
**Skin Contact:** Human: 500 mg/7 days; MILD  
**Oral Rat LD<sub>50</sub>:** 20 gm/kg  
**Dermal Rabbit LD<sub>50</sub>:** 20,800 mg/kg  
**Inhalation Rat LC<sub>50</sub>:** No data available  
**Human Data:** Oral Child TDLo: 79 gm/kg/56 weeks-I: Changes in surface EEG, convulsions  
**Other Toxicological Data:** Oral Mouse LD<sub>50</sub>: 22 gm/kg  
**Carcinogenicity:** No data available  
**Teratogenicity:** Intraperitoneal Mouse TDLo: 100 mg/kg (15 days pregnant): Effects on fetus  
**Mutagenicity:** Hamster; fibroblast: 32 mg/L  
**Synergistic Products:** None reported  
**Target Organs:** None reported  
**Medical Conditions:** None reported  
**Aggravated by Exposure:**

**12. ECOLOGICAL INFORMATION****ENVIRONMENTAL FATE:**

The environmental fate of this product is expected to be: **Land:** biodegradation with some leaching into the groundwater.  
**Water:** biodegradation. **Air:** not expected to volatilize due to low vapor pressure. Product is not expected to bioaccumulate.

**ENVIRONMENTAL EFFECTS:**

Aquatic toxicity for Propylene Glycol: Gold fish, LC<sub>50</sub> (24 hours): >5,000 mg/l.  
 Guppies, LC<sub>50</sub> (48 hours): >10,000 mg/l. Fingerling Rainbow trout, LC<sub>50</sub> (24 hours): >50,000 mg/l.

**13. DISPOSAL CONSIDERATIONS**

**RCRA 40 CFR 261 CLASSIFICATION:** Non-Hazardous Waste

**U.S. EPA WASTE NUMBER/DESCRIPTION:** None

If this product is disposed of as shipped, it does not meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D due to toxicity. As a non-hazardous liquid waste, it should be disposed of in accordance with all local, state, and federal regulations. Consult state or local officials for proper disposal method.

**14. TRANSPORTATION INFORMATION**

**DOT PROPER SHIPPING NAME:** Not Regulated

**DOT HAZARD CLASS:** None

**UN NUMBER:** None

**PACKING GROUP:** None

**DOT LABELS:** Primary: None Required

Subsidiary: None Required

**DOT PLACARDS:** None Required

**CERCLA Reportable Quantity:** None

**MARINE POLLUTANT:** No

**DOT 1993 Emergency Response Guidebook No.:** None

**DOT 1996 North American Emergency Response Guidebook No.:** None

**TDG PROPER SHIPPING NAME:** Not Regulated

**TDG HAZARD CLASS:** None Regulated Limit (RL): None

**UN NUMBER:** None

**PACKING GROUP:** None

**TDG LABELS:** Primary: None Required

Subsidiary: None Required

**TDG PLACARDS:** None Required

**CANUTEC Initial Emergency Response Guide Number:** None

**Other Shipping Information:** None

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**15. REGULATORY INFORMATION****COMPONENTS:** Propylene Glycol**OSHA**

Target Organs: None reported

**Carcinogenic Potential:**

Regulated by OSHA: No

Listed on NTP Report: No

IARC Listing: No

**U.S. EPA Requirements****Release Reporting****CERCLA (40 CFR 302):**

Listed Substance: No

Reportable Quantity: Not applicable

Category: Not applicable

RCRA Waste No.: Not applicable

Unlisted Substance: No

Reportable Quantity: Not applicable

Characteristic: Not applicable

RCRA Waste No.: Not applicable

**SARA TITLE III****Section 302 & 303 (40 CFR 355)**

Listed Substance: No

Reportable Quantity: Not applicable

Planning Threshold: Not applicable

**Section 311 & 312 (40 CFR 370)**Hazard Categories (product): Fire: N Sudden Release of Pressure: NReactive: NAcute Health: YChronic Health: N

Planning Threshold: 10,000 pounds

**Section 313 (40 CFR 372)**

Listed Toxic Chemical: No

Reporting Threshold: Not applicable

**U.S. TSCA STATUS**

Listed (40 CFR 710): Yes

**CANADIAN REGULATIONS**

Controlled Product: No

WHMIS Hazard Symbols: None

WHMIS Class &amp; Division: None

Product Identification Number: None

IDL Substance: Yes

Domestic Substance List: Yes

CEPA Priority List: Not listed

**Carcinogenicity:**

ACGIH Appendix A: Not listed

A1 Confirmed Human: Not applicable

A2 Suspected Human: Not applicable

IARC Group: Not listed

**STATE REGULATIONS:****State of California****Safe Drinking Water and Toxins Enforcement Act, 1986 (Proposition 65)**

Carcinogen: No

Reproductive Toxin: No

**OTHER REGULATIONS:**

State Right To Know Laws: PA

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**16. OTHER INFORMATION**

EPA Registration number: Not Applicable

Approved Product Uses: Not Applicable

**Special Notes:**

This product does not contain any material which the State of California has found to cause cancer and/or birth defects or other reproductive harm.

**MSDS Revision Information:** Form Revision made 02/09/94  
Information Revised This Issue Date: Updated information - sections 4, 5, 6, 14, 16.

MSDS distributed by **Great Western Chemical Company**  
Environmental Department  
Phone: 800-547-1400 FAX: 503-221-5767

**Prepared By:** Becca Heartwell**Date Prepared:** October 10, 1997

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