

GEOMAX FREEZE SAFE -100 is part of Eagle Mountain's complete GEOMAX fluid care system for geothermal heating & cooling, solar hydronic systems as well as hydronic boilers. With proper installation and annual inspection and maintenance, GEOMAX FREEZE SAFE -100 will protect systems from freeze damage and severe corrosion.

GEOMAX

Geothermal
HVAC Systems



FREEZE SAFE -100

For Geothermal, Solar & Hydronic Heating Applications

**96% PURE • *NON-TOXIC
NON-CORROSIVE • HIGH SYSTEM EFFICIENCY**

TECHNICAL SUPPORT: Specifications, installation design, installation techniques and unique applications will be reviewed upon request. Address inquiries ATTN: GEOMAX Technical Support, E-mail us: info@eagle-mt.com or phone us at 800-572-7831. Field services are available through factory representatives and Eagle Mountain staff. Contact Eagle Mountain for local representatives. Additional product information and MSDS are available immediately through our website at www.eagle-mt.com. These are available 24 hours a day, 7 days a week.

WARNING: This product must NOT be used in automotive cooling systems or with aluminum, zinc or galvanized metals.

*All ingredients in GEOMAX FREEZE SAFE -100 are Generally Regarded As Safe (GRAS) for use as food additives by the FDA. GEOMAX FREEZE SAFE -100 is safe for use wherever there is a possibility of contact with potable water.

FDA Reference:

Propylene Glycol: 21 CFR 182.1666

Dipotassium Phosphate: 21 CFR 182.6285

Both qualify as "Generally Recognized as Safe for use as Direct Food Additives".

Toxicological, Environmental, & Health Information:

Gosselin Toxicity Index (Propylene Glycol): 1 "essentially non-toxic"
Mean Single Lethal (Oral) Dosage: greater than one liter

GEOMAX FREEZE SAFE -100	Freeze Point	Flow Point	Burst Point
100%	>-60° F	>-70° F	>-100° F
75%	-60° F	-60° F	-100° F
50%	-30° F	-40° F	-75° F
40%	-7° F	-15° F	-60° F
35%	0° F	-10° F	-60° F

INSTALLATION: No matter what type of system or equipment GEOMAX FREEZE SAFE -100 is to be used in, several key steps are the same.

1. Clean the system. Minerals, scale, rust and sediment can shorten the life of your system, reduce GEOMAX FREEZE SAFE -100's effectiveness and reduce heat transfer efficiency. Drain the system completely. Flush with clean fresh water, add Pre-Cleaner. Add 1 pint for every 50 gallons of system capacity. Then run the system up to operating temperature. Allow Pre-Cleaner to circulate for 24 hours to 1 week. Drain and flush with clean water. Check the system for leaks and repair any that are found. GEOMAX FREEZE SAFE -100 may leak through some mechanical connections that do not leak with water. This is because of the viscosity of propylene glycol and water.

2. Measure total capacity of the system including the piping, tanks, boiler, collector plates, etc. Piping fluid capacity may be estimated using the pipe capacity chart on our website. Boiler and tank capacity must be obtained from the manufacturer of the equipment. Be sure all piping, collectors and thermal expansion is accounted for in your estimates.

3. Determine the low temperature protection needed and the corresponding GEOMAX FREEZE SAFE -100 concentration to use. Calculate the number of gallons of GEOMAX FREEZE SAFE -100 to add to the system. ALLOW FOR ESTIMATE ERRORS WHEN DETERMINING THE AMOUNT OF GEOMAX FREEZE SAFE -100 TO USE.

4. Make sure the system is empty, that the burner and pumps are shut off and that all zone and other valves are open so that no part of the system is isolated. Add GEOMAX FREEZE SAFE -100 and then deionized or distilled water or pre-mix the GEOMAX FREEZE SAFE -100 with water before adding the mixture to the system.

5. Remove all air from the system. Oxygen is required for corrosion to occur, so the less oxygen present, the better the corrosion resistance. Air can also reduce circulation, waste energy and cause noise. Air is entrapped in water and other fluids and only is extracted over time, so several ventings or purgings may be necessary to have an airless system. Be certain to purge all air vents in the system.

6. Test the fluid after installation and thorough mixing to insure the proper amount of freeze protection is present. Test the fluid for pH, reserve alkalinity and freeze protection using either a GEOMAX FREEZE SAFE -100 test kit, a pH test kit for pH and a GEOMAX FREEZE SAFE -100 test kit or a propylene glycol refractometer for freeze protection.

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5 GALLON

55 GALLON

