



## GeoSafe<sup>®</sup> Geothermal Fluid

**GeoSafe<sup>®</sup>** is an ethyl alcohol based fluid, specifically formulated for geothermal systems. In colder climates an antifreeze fluid is required to offer freeze protection and still provide a high level of heat transfer capability.

**GeoSafe<sup>®</sup>** is that fluid.

**GeoSafe<sup>®</sup>** is made from renewable ethyl alcohol with a proven inhibitor package to provide the added benefit of corrosion protection as well as freeze point depression. Although not toxic it has a bittering agent to render it undrinkable by humans and animals.

**GeoSafe<sup>®</sup>** is available as a full strength, undiluted fluid or as a 25% premixed solution **GeoSafe<sup>®</sup> 25**. The premixed product is diluted with water meeting the following minimum requirements:

Calcium Carbonate	100 ppm (max.)
Calcium	50 ppm (max.)
Magnesium	25 ppm (max.)
Chloride	40 ppm (max.)
Sulfate	100 ppm (max.)

**GeoSafe<sup>®</sup>** is safe for all geothermal systems. Although there may be some States or Provinces that do not allow its use. In those cases we recommend the use of SAFE-T-THERM<sup>®</sup> our food grade inhibited propylene glycol product.

### Properties GeoSafe<sup>®</sup>

Freeze Point °F	+7°
Boiling Point	188°
Viscosity @ 60°F Centipoise	1.5
Specific Heat @ 60°F (BTU/ft <sup>3</sup> °F)	0.22
Specific Heat @ 60°F (kJ/kg K)	1.049
Vapor Pressure 160°F (mm Hg)	500
Flash Point °F (tag closed cup)	60°
Biodegradation % after 20 day BOD test	93
Oral Toxicity	Low
NFPA Code	0, 3, 0

*GeoSafe<sup>®</sup> is made from ethyl alcohol a flammable liquid, special handling is required to dispense this product into a geothermal system contact Houghton Chemical for correct handling procedures*