



## GreenFrost

*A Bio-Renewable Inhibited Freeze Point Depression Fluid  
an earthcare™ product environmentally engineered to be earthwise™*

### General Product Description

- **GreenFrost**, a non-toxic environmentally friendly anti-freeze replacement for Ethylene or Propylene Glycol charged systems.
- **GreenFrost** is truly a step forward in alleviating oil derivative dependency! And at the same time a bio-renewable based product that has the same freeze protection properties as traditional Ethylene/Propylene glycols.
- **GreenFrost** is safer to use, less toxic to humans, less toxic to the environment and makes America less dependant on foreign oil sources!
- **GreenFrost** represents another product built on **earthcare™ products environmentally engineered to be earthwise™**

### Benefits of Using Green-Frost 100

- **GreenFrost** is a bio-renewable based product! We can grow more without harming the earth!
- **GreenFrost's** base material 1,2,3-Propanetriol can and is easily derived from corn!
- **GreenFrost** is not processed from oil and is not directly linked to the supply or sources of oil.
- **GreenFrost** like Apple Pie is Home Grown in America!
- **GreenFrost** contains organic corrosion inhibitors for Ferrous and Non-Ferrous Metals.
- **GreenFrost** unlike many glycol based products does NOT contain Phosphates! **GreenFrost** relies again on bio-renewable components to retard ferrous metal corrosion. Phosphates are a substantial micro-nutrient promoting the proliferation of microorganisms in closed systems. **GreenFrost** does not contain ortho or poly-phosphate based compounds which would promote the proliferation of corrosive microorganisms and system fouling.
- **GreenFrost's** unique combination of corrosion inhibitors will protect your systems metallurgy from corrosion and will actually act to retard the corrosion processes that may have taken place prior to using **GreenFrost**
- **GreenFrost** contains an iron stabilization agent retarding iron oxides from fouling a system.
- **GreenFrost** contains a hardness stabilization and dispersal agent preventing mineral scale deposits from robbing heat transfer efficiencies.
- **GreenFrost** contains pH buffering agents which will help to retard overall corrosion cells from forming.
- **GreenFrost** contains a potable water approved Fluorescent marking dye. If there are small leaks you can find **GreenFrost** visually or with a ultra-violet light wand.
- **GreenFrost** although non-toxic and environmentally friendly contains a bittering agent! If someone were to try and consume **GreenFrost** the bittering agent would cause the person to spit out the water immediately.
- **GreenFrost** is totally miscible with Ethylene or Propylene Glycol charged systems. If you need to reduce the freeze point of a currently charged system you can confidently add the required amount of **GreenFrost** and there are no compatibility issues. Both glycols are totally miscible with **GreenFrost**.
- **GreenFrost** is NOT a SARA /CERCLA listed as a toxic discharge chemical, unlike Ethylene Glycol. Discharges of Ethylene Glycol are highly regulated! Ethylene Glycol is toxic to humans, animals and fish.
- **GreenFrost's** base material 1,2,3-Propanetriol is an actual food additive!!

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*A portion of all sales of GreenFrost earthcare™ products are donated to  
Non-profit organizations working to reclaim our Living Earth.*



**Physical Properties: GreenFrost**

Form:	Liquid	Color:	Green
Odor:	Slight	pH:	10-12
Density:	9.3#/gallon	Specific Gravity:	1.1
Freeze Point:	Approximately 32F	Freeze/Thaw Recovery:	Complete
Ship Class:	Non Regulated Materials		
Contains:			
HMIS Code	100C		

**Application Rates: GreenFrost**

**GreenFrost** should be applied to system based upon the table values outlined below. The amount of **GreenFrost** applied will be dependant upon the volume of the system. If the volume of the system is unknown, rather than waste time/effort and **GreenFrost** by charging the system recirculating, testing and then having to add or delete more **GreenFrost** to achieve the correct freeze point required. We would recommend a proper system sizing be done using salt as a volume determinant. Please feel free to contact a **GreenFrost** supplier for procedures and requirements for sizing systems.

% <b>GreenFrost</b> by Weight	Specific Gravity		Freeze Point Centigrade	Freeze Point Fahrenheit
10.0	1.024		-1.6C	29.1F
20.0	1.049		-4.8C	23.4F
30.0	1.075		-9.5C	14.9F
40.0	1.102		-15.5C	4.3F
50.0	1.129		-22.0	-7.4
<b>60.0</b>	<b>1.157</b>		<b>-33.6</b>	<b>-28.5</b>
70.0	1.184		-37.8	-36
80.0	1.212		-19.2	-2.3
90.0	1.239		-1.6	29.1
100.0	1.265		17.0	62.6

Generally, the required amount of **GreenFrost** should be pumped into the system with water. System should be re-circulated for several days to allow complete mixing. The system should then be cross-checked for the % **GreenFrost** present and the corresponding freeze point.

Although **GreenFrost** has both iron and hardness control additives if a system is older and noticeably fouled a thorough cleaning and flushing of the system using one of the **earthcare™** cleaners to remove the gross contaminants would be recommended. The system should then be dumped and flushed with fresh water or at a minimum an ongoing filtration process should be employed to slowly remove the gross contaminants. **GreenFrost** corrosion inhibitors like any other corrosion inhibitor work far better with clean metal surfaces!

**GreenFrost** is compatible with many of the non-oxidizing microbiocides available in the marketplace. If a system is fouled with microorganisms we can provide specific products and guidelines for treating and removing the microorganisms from your system. Be aware the microorganisms can and will cause corrosion, fouling of a system, odors and will work to degrade **GreenFrost** and/or the Ethylene/Propylene Glycols that may be present in a system.