

General Product Description

- eGuard F, a non-toxic environmentally friendly anti-freeze replacement for Ethylene or Propylene Glycol charged systems.
- eGuard F has excellent thermo and pump energy saving over propylene of ethylene glycol using systems. Energy savings of over 10% can be found in most systems.
- eGuard F is truly a step forward in alleviating oil derivative dependency! And with better freeze protection properties as traditional Ethylene/Propylene glycols.
- eGuard F is safer to use, less toxic to humans, less toxic to the environment.
- eGuard F contains organic corrosion inhibitors for Ferrous and Non-Ferrous Metals
- eGuard F contains pH buffering agents which will help to retard overall corrosion cells from forming.
- eGuard F contains a potable water approved Fluorescent marking dye. If there are small leaks you can find eGuard F visually or with a ultra-violet light wand.

| Test | eGuard F | Ethylene Glycol | Propylene Glycol | Methanol* |
|-----------------------------|-------------------|---|--------------------|-----------------------|
| Flash Point ASTM D92 | None | 111 °C (232 °F) | 99C (210 °F) | 13 °C (55 °F) |
| Autoignition Temperature | None | 398 °C (748 °F) | 371 °C (700 °F) | 455 °C (851 °F) |
| ACGIH TLV | Not listed | 100 mg/m ³ ceiling aerosol | Not listed | 262 mg/m ³ |
| OSHA – Final PELs | Not listed | 50 ppm | Not listed | 200 ppm |
| Reportable Quantity | 14591 lbs | 5000 lbs | None | 5000 lbs |
| Risk Phrases | None | R22 | None | R23/R25 |
| Inhalation Hazard | None | Nausea, dizziness headache | None | Nausea, blindness |
| Fire Hazard | Non- flammable | Flammable | Flammable | Highly flammable |
| Irritation Hazard | Mild | Mild | Mild | Mild |

* Flash points of methanol:water combinations are as follows:
20:80 = 54 °C (130 °F); 50:50 = 24 °C (75 °F); 80:20 = 13 °C (55 °F)

Physical Properties:

| | | | |
|---------------|--------------------------------------|--------------------------|----------|
| Form: | Liquid | Color: | Blue |
| Odor: | Slight | pH: | 10-12 |
| Density: | 13.67#/gallon | Specific Gravity: | 1.639 |
| Freeze Point: | Approximately -60F | Freeze/Thaw Recovery: | Complete |
| Ship Class: | Non Regulated Materials | | |
| Contains: | Potassium Formate with Inhibitors | HMIS Code | 100C |

Application Rates: eGuard F

eGuard F should be applied to system based upon the table values outlined below. The amount of eGuard F applied will be dependent upon the volume of the system. If the volume of the system is unknown, rather than waste time/effort and eGuard F by charging the system recirculating, testing and then having to add or delete more 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 eGuard F supplier for procedures and requirements for sizing systems.

| Properties | eGuard F | Et Glycol | Prop Glycol |
|---|--------------|------------|-------------|
| Concentration: | 26.6% | 40% | 40% |
| Density @15.6°C, lb/ft ³ D4052 | 72.42 | 66.8 | 65.48 |
| Freeze Point (°F) | -6.5 | -8 | -6 |
| Dynamic Viscosity, cPs @ °C | | | |
| 20 | 2.54 | 7.74 | 18.52 |
| 10 | 2.92 | 10.13 | 26.99 |
| 0 | 3.47 | 13.76 | 40.92 |
| -15 | 4.89 | | |
| Thermal Conductivity, Btu/(hr.ft ²)(°F/ft) @ °F | | | |
| 0 | 0.3526 | 0.216 | 0.211 |
| 50 | 0.3757 | 0.220 | 0.215 |
| 68 | 0.3930 | 0.224 | 0.218 |
| 86 | 0.4162 | 0.227 | 0.222 |
| Specific Heat, Btu/(lb.°F) @ °F | | | |
| 68 | 0.6700 | 0.808 | 0.864 |
| 86 | 0.6600 | 0.812 | 0.868 |
| 104 | 0.6700 | 0.816 | 0.872 |
| 122 | 0.6800 | 0.821 | 0.877 |
| Refractive Index | 1.36 | 1.3752 | 1.3767 |

| % eGuard F | % Formate | Freeze Point |
|------------|-----------|--------------|
| 3.3% | 2.5% | 30 |
| 6.7% | 5.0% | 25 |
| 10.0% | 7.5% | 20 |
| 13.3% | 10.0% | 15 |
| 16.6% | 12.5% | 10 |
| 20.0% | 15.0% | 4.5 |
| 23.3% | 17.5% | -1 |
| 26.6% | 20.0% | -6.5 |
| 29.9% | 22.5% | -12 |
| 33.3% | 25.0% | -18 |
| 36.6% | 27.5% | -24 |
| 39.9% | 30.0% | -31 |
| 43.2% | 32.5% | -39 |