

Inhibited Propylene Glycol Heat Transfer Fluid

Process Applications

- HVAC/R
- Boilers and heat exchangers
- Energy applications
- Geothermal energy
- Cooling towers
- Process cooling & heating
- Line heaters
- Winterization
- Solar Applications
- Ice & snow melting systems
- Plastic extrusion

■ Dynalene EG-V1 Overview

Dynalene EG-V1 is an inhibited ethylene glycol heat transfer fluid which offers users a stable, efficient, and aluminum-safe product for applications where freeze protection is needed. Properly used and maintained, Dynalene EG-V1 offers excellent thermophysical properties all while protecting your system from corrosion and degradation for years.

Dynalene EG-V1's inhibitor package is specifically formulated to protect systems using aluminum materials and alloys even at temperatures > 60°C.

■ Corrosion Protection

Dynalene EG-V1 utilizes a unique corrosion inhibitor package, which is made from non-toxic raw materials. This inhibitor offers superior corrosion protection for most metals including aluminum, carbon steel, brass, copper, stainless steel, and cast iron by creating a corrosion-preventing passive layer on the surface that contacts the Dynalene EG-V1. The inhibitor also stabilizes the pH of the fluid. **To ensure the inhibitor package provides the best corrosion protection, Dynalene sells this product as pre-mixed solutions. Please contact Dynalene if you are interested on-site dilution of Dynalene PG-V1.**

■ Benefits of Choosing Dynalene EG-V1

- Pre-mixed solutions
- Custom blends
- Dyes available: yellow, red, blue, pink and fluorescent green
- Can be re-inhibited
- Proven performance
- Available worldwide
- Cost-effective
- Total fluid care option

■ Dynalene's Fluid Care Program

Coupling our Dynalene fluids with a fluid care program can extend the life of your systems significantly. We offer yearly testing of the heat transfer fluid in your system and can track the changes in the fluid year to year so adjustments can be made to keep your systems working at its best.

Recommended Temperature Range:

-51°C (-60°F) to 90°C (194°F)

Required Concentrations of Dynalene EG-V1 for Burst Protection:

| Temperature | | Vol% Dynalene EG-V1 |
|-------------|-------|----------------------|
| °C | °F | For Burst Protection |
| -6 | 25 | 12 |
| -13.2 | 8 | 20 |
| -18 | -2 | 24 |
| -23 | -9 | 28 |
| -26 | -14 | 30 |
| -32 | -25 | 33 |
| < -40 | < -40 | 35 |

■ Properties of Dynalene EG-V1

A comprehensive list of all thermo-physical properties of Dynalene EG-V1 can be found on pages 2, 3, 4, and 5. For health and safety information or to request a Safety Data Sheet, contact our Dynalene sales representatives.

| | |
|--------------|-----------------------------|
| Composition: | Ethylene glycol, inhibitors |
| Appearance: | Clear, colorless |
| Odor: | Little or none |

| | |
|--------------|------------------------------|
| pH: | 10.0-11.0 |
| Flash Point: | None for concentrations <85% |

■ Quantity & Availability

Dynalene EG-V1 is offered in 1, 2.5, 5, 30, 55, and 265-gallon containers as well as 5,000-gallon tankers. Pricing depends on quantity, and Dynalene, Inc. will work with you to try to fit your budget.

General Properties

| Vol. % Dynalene EG-V1 | Wt. % Dynalene EG-V1 | Freeze Point °F | Freeze Point °C | Boiling Point °F | *Reserve Alkalinity (mL) | Specific Gravity 22°C (72°F) |
|--------------------------|-------------------------|--------------------|--------------------|---------------------|-----------------------------|---------------------------------|
| 0 | 0.0 | 32 | 0 | 212 | 0 | 1.000 |
| 5 | 5.2 | 29 | -1.7 | 212 | ≥ 0.5 | 1.011 |
| 10 | 10.5 | 26 | -3.3 | 212 | ≥ 1.0 | 1.018 |
| 15 | 15.6 | 23 | -5 | 212 | ≥ 1.5 | 1.025 |
| 20 | 20.8 | 19 | -7.2 | 213 | ≥ 2.0 | 1.032 |
| 21 | 21.8 | 17 | -8.3 | 213 | ≥ 2.1 | 1.033 |
| 22 | 22.9 | 17 | -8.3 | 213 | ≥ 2.2 | 1.035 |
| 23 | 23.9 | 16 | -8.9 | 213 | ≥ 2.3 | 1.036 |
| 24 | 24.9 | 15 | -9.4 | 213 | ≥ 2.4 | 1.038 |
| 25 | 25.9 | 14 | -10.1 | 214 | ≥ 2.5 | 1.039 |
| 26 | 27.0 | 13 | -10.6 | 214 | ≥ 2.6 | 1.040 |
| 27 | 28.0 | 12 | -11.1 | 214 | ≥ 2.7 | 1.042 |
| 28 | 29.0 | 10 | -12.2 | 215 | ≥ 2.8 | 1.043 |
| 29 | 30.1 | 9 | -12.8 | 216 | ≥ 2.9 | 1.045 |
| 30 | 31.1 | 8 | -13.3 | 216 | ≥ 3.0 | 1.046 |
| 31 | 32.1 | 7 | -13.9 | 216 | ≥ 3.1 | 1.047 |
| 32 | 33.1 | 5 | -15.0 | 216 | ≥ 3.2 | 1.049 |
| 33 | 34.1 | 4 | -15.6 | 216 | ≥ 3.3 | 1.050 |
| 34 | 35.1 | 2 | -16.7 | 217 | ≥ 3.4 | 1.052 |
| 35 | 36.1 | 1 | -17.2 | 217 | ≥ 3.5 | 1.053 |
| 36 | 37.2 | -1 | -18.3 | 217 | ≥ 3.6 | 1.054 |
| 37 | 38.2 | -3 | -19.4 | 218 | ≥ 3.7 | 1.056 |
| 38 | 39.2 | -4 | -20.0 | 218 | ≥ 3.8 | 1.057 |
| 39 | 40.2 | -6 | -21.1 | 219 | ≥ 3.9 | 1.059 |
| 40 | 41.2 | -8 | -22.2 | 219 | ≥ 4.0 | 1.060 |
| 41 | 42.2 | -10 | -23.3 | 219 | ≥ 4.1 | 1.062 |
| 42 | 43.2 | -12 | -24.4 | 219 | ≥ 4.2 | 1.063 |
| 43 | 44.2 | -14 | -25.5 | 219 | ≥ 4.3 | 1.064 |
| 44 | 45.2 | -16 | -26.7 | 220 | ≥ 4.4 | 1.066 |
| 45 | 46.2 | -18 | -27.8 | 220 | ≥ 4.5 | 1.067 |
| 46 | 47.2 | -21 | -29.4 | 220 | ≥ 4.6 | 1.069 |
| 47 | 48.2 | -23 | -30.6 | 221 | ≥ 4.7 | 1.070 |
| 48 | 49.2 | -26 | -32.2 | 221 | ≥ 4.8 | 1.071 |
| 49 | 50.2 | -28 | -33.3 | 222 | ≥ 4.9 | 1.073 |
| 50 | 51.2 | -31 | -35.0 | 222 | ≥ 5.0 | 1.074 |
| 51 | 52.2 | -34 | -36.7 | 222 | ≥ 5.1 | 1.076 |
| 52 | 53.2 | -37 | -38.3 | 223 | ≥ 5.2 | 1.077 |
| 53 | 54.2 | -40 | -40.0 | 223 | ≥ 5.3 | 1.078 |
| 54 | 55.2 | -43 | -41.7 | 223 | ≥ 5.4 | 1.080 |
| 55 | 56.2 | -46 | -43.3 | 223 | ≥ 5.5 | 1.081 |
| 56 | 57.2 | -49 | -45.0 | 224 | ≥ 5.6 | 1.083 |
| 57 | 58.2 | -53 | -47.2 | 224 | ≥ 5.7 | 1.084 |
| 58 | 59.2 | -56 | -48.9 | 224 | ≥ 5.8 | 1.085 |
| 59 | 60.2 | <-60 | -51.1 | 225 | ≥ 5.9 | 1.087 |
| 60 | 61.2 | <-60 | -51.1 | 225 | ≥ 6.0 | 1.088 |
| 65 | 66.1 | <-60 | -51.1 | 227 | ≥ 6.5 | 1.095 |
| 70 | 71.0 | <-60 | -51.1 | 230 | ≥ 7.0 | 1.102 |
| 75 | 75.9 | <-60 | -51.1 | 238 | ≥ 7.5 | 1.109 |
| 80 | 80.8 | <-60 | -51.1 | 246 | ≥ 8.0 | 1.116 |

Viscosity

1 cP= 0.001 Pa·s

| Temp, °F | Dynalene EG-V1, Viscosity, cP | | | | | | | | |
|----------|-------------------------------|------|------|------|------|------|------|------|------|
| | Volume | | | | | | | | |
| | 20% | 25% | 30% | 35% | 40% | 45% | 50% | 55% | 60% |
| -30 | | | | | | | | | 89.7 |
| -20 | | | | | | | 40.4 | 50.5 | 60.5 |
| -10 | | | | | | | 27.3 | 34.7 | 42.1 |
| 0 | | | | | 13.8 | 16.6 | 19.3 | 24.7 | 30.1 |
| 10 | | | 6.83 | 8.47 | 10.1 | 12.2 | 14.3 | 18.2 | 22.1 |
| 20 | 3.90 | 4.64 | 5.38 | 6.56 | 7.74 | 9.32 | 10.9 | 13.8 | 16.6 |
| 30 | 3.14 | 3.74 | 4.33 | 5.21 | 6.09 | 7.29 | 8.48 | 10.6 | 12.7 |
| 40 | 2.59 | 3.07 | 3.54 | 4.23 | 4.91 | 5.84 | 6.77 | 8.34 | 9.90 |
| 50 | 2.18 | 2.57 | 2.95 | 3.50 | 4.04 | 4.77 | 5.50 | 6.68 | 7.85 |
| 60 | 1.86 | 2.18 | 2.49 | 2.94 | 3.38 | 3.97 | 4.55 | 5.44 | 6.33 |
| 70 | 1.61 | 1.87 | 2.13 | 2.50 | 2.87 | 3.34 | 3.81 | 4.49 | 5.17 |
| 80 | 1.41 | 1.63 | 1.84 | 2.15 | 2.46 | 2.85 | 3.23 | 3.76 | 4.28 |
| 90 | 1.24 | 1.42 | 1.60 | 1.87 | 2.13 | 2.45 | 2.76 | 3.17 | 3.58 |
| 100 | 1.11 | 1.26 | 1.41 | 1.64 | 1.87 | 2.13 | 2.39 | 2.71 | 3.03 |
| 120 | 0.90 | 1.01 | 1.11 | 1.29 | 1.46 | 1.64 | 1.82 | 2.03 | 2.23 |
| 140 | 0.74 | 0.82 | 0.90 | 1.04 | 1.17 | 1.30 | 1.43 | 1.56 | 1.69 |
| 160 | 0.63 | 0.69 | 0.75 | 0.85 | 0.95 | 1.05 | 1.15 | 1.24 | 1.32 |
| 180 | 0.54 | 0.59 | 0.63 | 0.71 | 0.79 | 0.87 | 0.94 | 1.00 | 1.06 |
| 200 | 0.47 | 0.51 | 0.54 | 0.61 | 0.67 | 0.73 | 0.78 | 0.82 | 0.86 |
| 220 | 0.41 | 0.44 | 0.46 | 0.52 | 0.57 | 0.62 | 0.66 | 0.69 | 0.72 |

Thermal Conductivity

1 Btu/hr-ft·°F = 1.73 W/mK

| Temp, °F | Dynalene EG-V1, Thermal Conductivity, Btu/hr-ft·°F | | | | | | | | |
|----------|--|-------|-------|-------|-------|-------|-------|-------|-------|
| | Volume | | | | | | | | |
| | 20% | 25% | 30% | 35% | 40% | 45% | 50% | 55% | 60% |
| -30 | | | | | | | | | 0.178 |
| -20 | | | | | | | 0.193 | 0.187 | 0.181 |
| -10 | | | | | | | 0.197 | 0.191 | 0.184 |
| 0 | | | | | 0.216 | 0.208 | 0.200 | 0.193 | 0.186 |
| 10 | | | 0.238 | 0.229 | 0.220 | 0.212 | 0.204 | 0.197 | 0.189 |
| 20 | 0.264 | 0.254 | 0.243 | 0.234 | 0.224 | 0.216 | 0.207 | 0.199 | 0.191 |
| 30 | 0.269 | 0.258 | 0.247 | 0.237 | 0.227 | 0.219 | 0.210 | 0.202 | 0.194 |
| 40 | 0.274 | 0.263 | 0.251 | 0.241 | 0.231 | 0.222 | 0.212 | 0.204 | 0.196 |
| 50 | 0.279 | 0.267 | 0.255 | 0.245 | 0.234 | 0.225 | 0.215 | 0.207 | 0.198 |
| 60 | 0.284 | 0.272 | 0.259 | 0.248 | 0.237 | 0.228 | 0.218 | 0.209 | 0.200 |
| 70 | 0.288 | 0.276 | 0.263 | 0.252 | 0.240 | 0.230 | 0.220 | 0.211 | 0.202 |
| 80 | 0.292 | 0.279 | 0.266 | 0.255 | 0.243 | 0.233 | 0.223 | 0.214 | 0.204 |
| 90 | 0.296 | 0.283 | 0.269 | 0.258 | 0.246 | 0.236 | 0.225 | 0.216 | 0.206 |
| 100 | 0.299 | 0.286 | 0.272 | 0.260 | 0.248 | 0.238 | 0.227 | 0.218 | 0.208 |
| 120 | 0.305 | 0.291 | 0.277 | 0.265 | 0.253 | 0.242 | 0.230 | 0.220 | 0.210 |
| 140 | 0.311 | 0.297 | 0.282 | 0.269 | 0.256 | 0.245 | 0.233 | 0.223 | 0.213 |
| 160 | 0.315 | 0.300 | 0.285 | 0.272 | 0.259 | 0.248 | 0.236 | 0.226 | 0.215 |
| 180 | 0.318 | 0.303 | 0.288 | 0.275 | 0.262 | 0.250 | 0.238 | 0.228 | 0.217 |
| 200 | 0.320 | 0.305 | 0.290 | 0.277 | 0.263 | 0.252 | 0.240 | 0.229 | 0.218 |
| 220 | 0.321 | 0.306 | 0.291 | 0.278 | 0.265 | 0.253 | 0.240 | 0.230 | 0.219 |

1 Btu/lb_m·°F = 4,186 J/kg°C

Specific Heat

| Dynalene EG-V1, Specific Heat, Btu/lb·°F | | | | | | | | | |
|--|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Temp, °F | Volume | | | | | | | | |
| | 20% | 25% | 30% | 35% | 40% | 45% | 50% | 55% | 60% |
| -30 | | | | | | | | | 0.669 |
| -20 | | | | | | | 0.730 | 0.702 | 0.674 |
| -10 | | | | | | | 0.735 | 0.708 | 0.680 |
| 0 | | | | | 0.792 | 0.766 | 0.740 | 0.713 | 0.686 |
| 10 | | | 0.845 | 0.821 | 0.796 | 0.771 | 0.745 | 0.719 | 0.692 |
| 20 | 0.894 | 0.871 | 0.848 | 0.825 | 0.801 | 0.776 | 0.751 | 0.725 | 0.698 |
| 30 | 0.897 | 0.875 | 0.852 | 0.829 | 0.805 | 0.781 | 0.756 | 0.730 | 0.704 |
| 40 | 0.900 | 0.878 | 0.856 | 0.833 | 0.810 | 0.786 | 0.761 | 0.736 | 0.710 |
| 50 | 0.903 | 0.882 | 0.860 | 0.837 | 0.814 | 0.790 | 0.766 | 0.741 | 0.716 |
| 60 | 0.907 | 0.886 | 0.864 | 0.842 | 0.819 | 0.796 | 0.772 | 0.747 | 0.722 |
| 70 | 0.910 | 0.889 | 0.868 | 0.846 | 0.824 | 0.801 | 0.777 | 0.753 | 0.728 |
| 80 | 0.913 | 0.892 | 0.871 | 0.850 | 0.828 | 0.805 | 0.782 | 0.758 | 0.734 |
| 90 | 0.916 | 0.896 | 0.875 | 0.854 | 0.833 | 0.807 | 0.781 | 0.761 | 0.740 |
| 100 | 0.919 | 0.899 | 0.879 | 0.858 | 0.837 | 0.815 | 0.793 | 0.770 | 0.746 |
| 120 | 0.925 | 0.906 | 0.887 | 0.867 | 0.846 | 0.825 | 0.803 | 0.780 | 0.757 |
| 140 | 0.931 | 0.913 | 0.895 | 0.875 | 0.855 | 0.835 | 0.814 | 0.792 | 0.769 |
| 160 | 0.938 | 0.920 | 0.902 | 0.884 | 0.865 | 0.845 | 0.824 | 0.803 | 0.781 |
| 180 | 0.944 | 0.927 | 0.910 | 0.892 | 0.874 | 0.855 | 0.835 | 0.814 | 0.793 |
| 200 | 0.950 | 0.934 | 0.918 | 0.901 | 0.883 | 0.864 | 0.845 | 0.825 | 0.805 |
| 220 | 0.956 | 0.941 | 0.925 | 0.909 | 0.892 | 0.874 | 0.856 | 0.837 | 0.817 |

1 lb_m/ft³ = 16 kg/m³

Density

| Dynalene EG-V1, Density, lb/ft ³ | | | | | | | | | |
|---|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Temp, °F | Volume | | | | | | | | |
| | 20% | 25% | 30% | 35% | 40% | 45% | 50% | 55% | 60% |
| -30 | | | | | | | | | 70.40 |
| -20 | | | | | | | 69.26 | 69.76 | 70.26 |
| -10 | | | | | | | 69.12 | 69.61 | 70.10 |
| 0 | | | | | 67.93 | 68.45 | 68.97 | 69.46 | 69.94 |
| 10 | | | 66.68 | 67.24 | 67.79 | 68.31 | 68.82 | 69.30 | 69.78 |
| 20 | 65.36 | 65.96 | 66.55 | 67.10 | 67.64 | 68.15 | 68.66 | 69.13 | 69.60 |
| 30 | 65.23 | 65.82 | 66.41 | 66.95 | 67.49 | 67.99 | 68.49 | 68.96 | 69.43 |
| 40 | 65.10 | 65.69 | 66.27 | 66.80 | 67.33 | 67.83 | 68.32 | 68.78 | 69.24 |
| 50 | 64.97 | 65.54 | 66.11 | 66.64 | 67.17 | 67.66 | 68.14 | 68.61 | 69.08 |
| 60 | 64.83 | 65.40 | 65.96 | 66.48 | 66.99 | 67.48 | 67.96 | 68.41 | 68.86 |
| 70 | 64.68 | 65.24 | 65.79 | 66.31 | 66.82 | 67.30 | 67.77 | 68.22 | 68.66 |
| 80 | 64.52 | 65.07 | 65.62 | 66.13 | 66.63 | 67.11 | 67.58 | 68.02 | 68.46 |
| 90 | 64.36 | 64.91 | 65.45 | 65.95 | 66.44 | 66.91 | 67.38 | 67.82 | 68.25 |
| 100 | 64.20 | 64.74 | 65.27 | 65.76 | 66.25 | 66.71 | 67.17 | 67.60 | 68.03 |
| 120 | 63.85 | 64.37 | 64.88 | 65.36 | 65.84 | 66.29 | 66.74 | 67.16 | 67.58 |
| 140 | 63.47 | 63.98 | 64.48 | 64.95 | 65.41 | 65.85 | 66.28 | 66.69 | 67.10 |
| 160 | 63.07 | 63.56 | 64.05 | 64.50 | 64.95 | 65.38 | 65.80 | 66.21 | 66.61 |
| 180 | 62.65 | 63.12 | 63.59 | 64.03 | 64.47 | 64.89 | 65.30 | 65.70 | 66.09 |
| 200 | 62.20 | 62.66 | 63.11 | 63.54 | 63.97 | 64.38 | 64.78 | 65.16 | 65.54 |
| 220 | 61.72 | 62.17 | 62.61 | 63.03 | 63.44 | 63.84 | 64.23 | 64.61 | 64.98 |

1 psi = 6,895 Pa = 0.069 bar = 0.0681 atm = 51.7 mmHg = 21.7 inH₂O

Vapor Pressure

| Temp, °F | Dynalene EG-V1, Vapor Pressure, psia | | | | | | | | |
|----------|--------------------------------------|------|------|------|------|------|------|------|------|
| | Volume | | | | | | | | |
| | 20% | 25% | 30% | 35% | 40% | 45% | 50% | 55% | 60% |
| 100 | 0.9 | 0.9 | 0.8 | | | | | | |
| 110 | 1.2 | 1.2 | 1.1 | 1.1 | 1.0 | | | | |
| 120 | 1.6 | 1.6 | 1.5 | 1.5 | 1.4 | 1.4 | 1.3 | 1.2 | 1.1 |
| 130 | 2.0 | 2.0 | 2.0 | 1.9 | 1.8 | 1.8 | 1.7 | 1.6 | 1.5 |
| 140 | 2.7 | 2.6 | 2.5 | 2.5 | 2.4 | 2.3 | 2.2 | 2.1 | 2.0 |
| 150 | 3.5 | 3.4 | 3.3 | 3.2 | 3.1 | 3.1 | 2.8 | 2.6 | 2.6 |
| 160 | 4.4 | 4.3 | 4.2 | 4.1 | 3.9 | 3.8 | 3.6 | 3.5 | 3.3 |
| 170 | 5.6 | 5.5 | 5.3 | 5.2 | 5.0 | 4.8 | 4.6 | 4.4 | 4.2 |
| 180 | 7.0 | 6.6 | 6.2 | 6.3 | 6.3 | 6.1 | 5.8 | 5.6 | 5.3 |
| 190 | 8.7 | 8.5 | 8.3 | 8.1 | 7.8 | 7.5 | 7.2 | 6.9 | 6.6 |
| 200 | 10.8 | 10.6 | 10.3 | 10.0 | 9.7 | 9.7 | 9.0 | 8.2 | 8.2 |
| 210 | 13.2 | 12.9 | 12.6 | 12.2 | 11.8 | 11.4 | 11.0 | 10.5 | 10.0 |
| 220 | 16.4 | 15.9 | 15.3 | 14.9 | 14.4 | 13.9 | 13.4 | 12.9 | 12.3 |
| 230 | 19.4 | 19.0 | 18.5 | 18.0 | 17.5 | 16.9 | 16.2 | 15.6 | 14.9 |
| 240 | 23.3 | 22.8 | 22.3 | 21.7 | 21.0 | 20.3 | 19.5 | 18.7 | 17.9 |
| 250 | 27.9 | 26.6 | 26.6 | 25.9 | 25.1 | 25.1 | 23.3 | 21.4 | 21.4 |

Product Disclaimer

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