



PROTOCOL[®] HD-100

PREMIER COOLANT FOR NATURAL GAS ENGINES

Product Description

PROTOCOL HD blends contain industrially inhibited ethylene glycol for heavy-duty applications. PROTOCOL HD includes an additional ferrous metal inhibitor designed to mitigate cavitation corrosion on the wet-sleeve liners of natural gas fired engines.

PROTOCOL HD-100 has an operating range from -60°F to 350°F depending on the concentration and contains a blend of organic and inorganic inhibitors specifically formulated to keep mixed metal systems free from corrosion, without fouling critical heat exchange surfaces.

PROTOCOL HD is available as concentrate or premixed with deionized water to meet your specifications for freeze, burst, and boil protection. We recommended purchasing our premixed version to ensure optimal corrosion protection, heat transfer efficiency, and freeze point depression are achieved.

PROTOCOL HD blends have little to no negative effect on seals, elastomers, or other materials commonly found in most industrial applications. We do not recommend its use in systems containing galvanized steel unless etching of the zinc or magnesium based coatings is acceptable.

PROTOCOL HD coolants are compatible with most nationally recognized industrial coolants containing ethylene glycol, and can be safely commingled without compromising the integrity of either coolant. If desired, HD blends can be color coordinated with your existing coolant at no charge.

"Performance products of unparalleled quality and value" sm

Technical Data

Typical composition: HD-100, v%

Ethylene Glycol	≥ 92
Inhibitors	≥ 8
Color, typically	Bright Blue
Specific Gravity	~ 1.125-1.130
pH, 50% solution	~ 8.5 - 10.5
Reserve Alkalinity: 100%	~ 15.0 min

Typical properties of HD-50 v% solutions:

BP @ 760 mm Hg: (50%)	~ 225 °F
Flash Point: (<90%)	None
VP mm Hg: (50% @ 68°F)	~ 13.31
Thermal Conductivity:(50% @ 68°F)~	0.225
Specific Heat: (50% @ 68°F)	~ 0.81
Viscosity: (50% @ 68°F)	~ 3.37

Typical properties for aqueous solutions:

Freeze Point (°F)	Volume %	Boiling Point (°F)
24	10	213
15	20	215
9	25	217
3	30	218
-4	35	220
-13	40	222
- 34	50	225