



# PRODUCT SPECIFICATION DATA SHEET



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## BOSS LUBRICANTS CHILL E.G. (ETHYLENE GLYCOL) BOSS LUBRICANTS CHILL P.G. (PROPYLENE GLYCOL)

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### Fully-Formulated Glycol-Based Heat Transfer Fluid for HVAC Systems

BOSS LUBRICANTS  
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#### **Product Features**

##### **CHEMICAL MAKE-UP**

Phosphate-based with potassium.  
Phosphate and sodium tolytriazole as the primary condition.

- ❖ Phosphate-protects "white" or "hard" metals, cast iron, steel and aluminum
- ❖ Tolytriazole-protects "yellow" or "soft" metals, brass bronze, copper. Solder.

##### **CORROSION PROTECTION**

Protects steel, cast iron, copper brass, bronze and solder from 50°F-45°C to 150°F-65.5°

Protects aluminum up to 150°F/65.5°C

##### **HEAT TRANSFER FLUID MAINTENANCE PROGRAM**

Analyze for inhibitors and impurities every 6-12 months, with emphasis on phosphate and tolytriazole. If anything is abnormal, analyze a sample chill for inhibitors, phosphate and/or tolytriazole based on analysis, or change-out fluid if badly contaminated with foreign materials.

##### **OVERALL LIFE**

Should have a service life of 5-10 years or longer.

##### **WATER HARDNESS SENSITIVITY**

Water hardness compounds interact with phosphate, taking it out of solution and forming scale deposits. Phosphate concentration is reduced and precipitation formed.

##### **COST OF ADDITIVE**

Less expensive than all-organic types of inhibitor system.

## OVERVIEW

**BOSS CHILL E.G. / P.G.** provides outstanding corrosion protection for copper, brass, solder, steel, and cast iron and aluminum. It meets or exceeds **ASTM D1384**, the standard industry corrosion test for these metals. It is compatible with most plastics, elastomers and types of rubber. Its corrosion protection system includes organic acid technology which coats iron, steel, and aluminum metal surfaces to protect them from acidic attack and rust formation with a thin molecular coating that doesn't cause fouling or significantly reduce heat conduction through the metal heat transfer surfaces. **BOSS CHILL E.G. / P.G.** also contains tolyltriazole to protect copper, brass and solder from attack and oxygen scavengers to provide further protection from rust and pitting. A very effective buffering system neutralizes acids formed by the normal thermal and oxidative degradation of glycols, thus maintaining the pH in its optimum range.

### Applications – All-Aluminum Systems Including

- HVAC system freeze/burst/corrosion protection
- Process cooling/heating
- Solar heating
- Refrigeration warehouse floor heating
- Cold room dehumidify
- Ice skating rinks
- Sidewalk snow melting systems

### Water Quality Requirements

Water used to dilute **BOSS CHILL E.G. /CHILL P.G.** can be low-hardness, city water or well water, although the use of **deionized** water or distilled water is best. It is recommended that water with no more than 350 ppm hardness be used to dilute **BOSS CHILL E.G. /CHILL P.G.** or be used as make-up water.

### Fishshed Fluid Typical Properties for Reference in Blending Finished Fluids

Physical Property	Temp (°F)	15% Glycol Solution	30%Glycol Solution	40%Glycol Solution	50%Glycol Solution	60%Glycol Solution
Thermal Conductivity [BTU/(hr-ft <sup>3</sup> ) (°F/ft)]	40	0.265	0.253	0.234	0.215	0.199
	180	0.307	0.291	0.267	0.241	0.220
	250	0.310	0.293	0.269	0.245	0.224
Specific Heat [BTU/(lb°°F)]	40	0.885	0.862	0.820	0.774	0.724
	180	0.933	0.915	0.883	0.849	0.816
	250	0.958	0.944	0.913	0.882	0.845
Viscosity, Centipoise	40	3.11	3.59	4.94	6.81	9.93
	180	0.59	0.66	1.82	0.96	1.09
	250	0.37	0.40	0.47	0.55	0.59
Density, (lb/ft <sup>3</sup> )	40	65.19	65.71	66.61	67.50	68.33
	180	62.90	63.31	64.10	64.83	65.55
	250	61.05	61.42	62.15	62.81	63.44

<b>Characteristics Using EG/PG Glycol</b>		Vol. % Ethylene Glycol	Vol. % Finished Product	Freezing Point °F	Boiling Point °F @ 760 mm Hg
<b>Composition (Concentrate)</b>					
Ethylene/Propylene glycol		96.0 volume % max.			
Inhibitors & deionized water		4.0 volume % min.			
		15	15.6	23.6	215
		30	31.2	3.7	220
<b>pH</b>		40	41.6	-2.7	223
50% solution	9.8-10.8	50	52.1	-34.6	226
30% solution	9.6-10.6	60	62.5	-60.0	228
<b>Specific Gravity (60°F) Ethylene Glycol</b>					
96% solution	1.125 min	Vol. % Propylene Glycol	Vol. % Finished Product	Freezing Point °F	Boiling Point °F @ 760 mm Hg
50% solution	1.070 min				
<b>Specific Gravity (60°F) Propylene Glycol</b>					
96% solution	1.056 min	15	15.6	22.7	213
50% solution	1.046 min	30	31.2	8.4	216
		40	41.6	-6.7	218
		50	52.1	-28.6	222
		60	62.5	-59.9	226
<b>Reserve Alkalinity</b>					
96% solution	10.0 ml. min				
50% solution	none				
<b>Flash Point Ethylene Glycol</b>		<b>Propylene Glycol</b>			
96% solution	240°F min	220°F min.			
50% solution	none	none			