



TEMPERATURE CONTROLLERS... PORTABLE CHILLERS... CENTRAL CHILLERS... PUMP TANK STATIONS... TOWER SYSTEMS...

**SUBJECT: PROPER USE OF INHIBITED PROPYLENE GLYCOL**

**#7-A-114**

**4/14/95**

The use of a water-glycol mixture is needed when the operator desires a process temperature below 48°F. Freeze protection is required so ice crystals do not form and cause severe damage to both the water and refrigeration system.

**CHOOSING THE PROPER GLYCOL:**

For getting the most efficiency from your system, a propylene glycol such as “DowFrost” is a must. DowFrost contains special corrosion inhibitors for low system maintenance and better transfer capabilities than normal glycols. It also has a much longer fluid life up, to 20 years in some cases.

**USE OF PLAIN GLYCOL:**

Even through they do lower the freeze point, plain glycols are even more corrosive than water. The corrosion rate of plain ethylene glycol on iron, for example, is more than 2.5 times faster than plain water. On steel, it is 4.5 times faster.

**AUTOMOTIVE BASED ANTIFREEZE:**

**SHOULD NEVER BE USED!** Automotive antifreeze contains silicate based inhibitors, which are compatible with automotive components. In an industrial application, the silicates will leach out and form a gel-like substance on the heat transfer surfaces and reduce cooling efficiency of the system. These silicates have shown to significantly reduce the lifetime of pump seals.

**MAINTENANCE RESPONSIBILITY:**

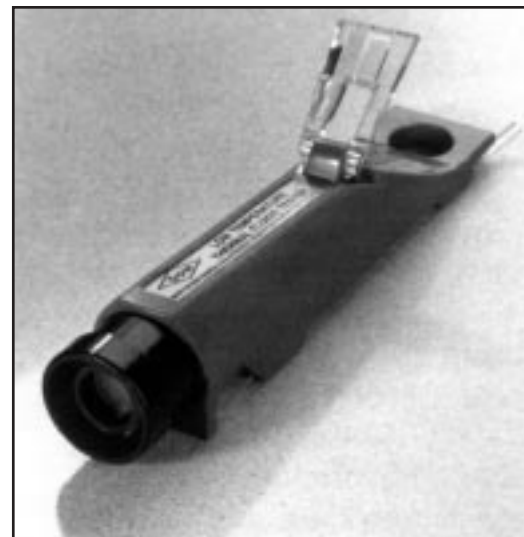
A hygrometer should be used on a regular basis to determine the mixture strength according to freezepoint. The freezepoint temperature should be 25°F below the lowest required setpoint (see chart). Water will evaporate from the mixture, and if you continue to add a premixed solution, eventually you will have too much glycol. It is necessary to add water or glycol to maintain proper freezepoint temperature. The device pictured is by far the most accurate and easy to use for maintaining and checking for proper glycol levels.

**FREEZING POINTS FOR WATER/PROPYLENE GLYCOL SOLUTIONS**

PERCENTAGE OF GLYCOL* WATER		FREEZE POINT	
		iF	iC
0	100	32	-6.7
20	80	20	-9.4
25	75	15	-12.2
30	70	10	-16.1
35	65	3	-20.6
45	55	-15	-26.7
50	50	-20	-33.3

\*PROPYLENE GLYCOL

NOTE: GLYCOL FREEZE POINT MUST BE 10°F BELOW LOWEST SETPOINT



Contact:  
Misco Products:  
1-800-358-1100  
Model #7084VP

**SOURCE OF INHIBITED PROPYLENE GLYCOLS:** for a complete literature package, material, safety data sheets and purchasing information, contact the following:  
**Dow Chemical 1-800-447-4369 (Canada 1-800-363-6250)**  
**Dowfrost inhibited propylene glycol.**

