

# ETHYLENE & PROPYLENE GLYCOL

## Why use Ethylene Glycol?

- ◇ Better heat transfer
- ◇ Lower fluid pressure drop
- ◇ Lower operating temperature

## Why use Propylene Glycol?

- ◇ Required by local code
- ◇ Lower toxicity
- ◇ Food process application

## **What are *freeze protection* and *burst protection*?**

- ◇ *Freeze Protection* is when the equipment being designed must remain operational down to the design temperature (or equipment requires start-up at low temperature).
- ◇ *Burst Protection* is for situations when the equipment will not be operated (and, thus, no liquid pumped) at design temperature, but the equipment must be protected from bursting.

## % Glycol *BY WEIGHT* vs Freeze Point

% Glycol (BY WEIGHT)	Freezing Point (°F)	
	Ethylene Glycol	Propylene Glycol
0	32.0	32.0
5	29.4	29.1
10	26.2	26.1
15	22.2	22.9
20	17.9	19.2
25	12.7	14.7
30	6.7	9.2
35	-0.2	2.4
40	-8.1	-6.0
45	-17.5	-16.1
50	-28.5	-28.3
55	-42.0	-59.9

## Freeze and Burst Protection *BY VOLUME*

Temperature (°F)	Ethylene (% by Volume)		Propylene (% by Volume)	
	Freeze	Burst	Freeze	Burst
20	17.3	11.9	18.0	12.0
10	27.1	18.4	29.0	20.0
0	35.7	23.8	36.0	24.0
-10	42.2	28.1	42.0	28.0
-20	47.6	32.5	46.0	30.0
-30	51.9	32.5	50.0	33.0
-40	56.3	32.5	54.0	35.0
-50	60.6	32.5	57.0	35.0