Freezing Point of Propylene Glycol based Water Solutions

Freezing point of propylene glycol based water solutions at different temperatures:

Freezing Point								
Propylene Glycol Solution *(%)*	*by mass*	0	10	20	30	40	50	60
	by volume	0	10	19	29	40	50	60
Temperature	^oF	32	26	18	7	-8	-29	-55
	^oC	0	-3	-9	-16	-23	-35	-48

Due to slush creation propylene glycol and water solutions should not be used close to the freezing points.

Specific Gravity of Propylene Glycol Solutions

Specific gravity of propylene glycol is in the range

Specific Gravity - *SG* -								
Propylene Glycol Solution *(%)*	*by mass*	0	10	20	30	40	50	60
	by volume	0	10	20	29	40	50	60
Specific Gravity - *SG* - [1)]		1.000	1.008	1.017	1.026	1.034	1.041	1.046

[1)] Specific gravity based on propylene glycol solutions with temperature 60°F.

Boiling Points of Propylene Glycol Solutions

Boiling points of propylene glycol

Boiling Point								
Propylene Glycol Solution *(%)*	*by mass*	0	10	20	30	40	50	60
	by volume	0	10	20	29	40	50	60
Temperature *(^oF)*		212	212	213	216	219	222	225

- *$T(^oC) = 5/9[T(^oF) - 32]$*

Specific Heat of Propylene Glycol Solutions

Specific heat capacity of propylene glycol

Specific Heat								
Propylene Glycol Solution *(%)*	*by mass*	0	10	20	30	40	50	60
	by volume	0	10	20	29	40	50	60
Specific Heat - c_p - *(Btu/lb.^oF)*		1.000	0.980	0.960	0.935	0.895	0.850	0.805

- *1 Btu/(lb_m ^oF) = 4,186.8 J/(kg K) = 1 kcal/(kg ^oC)*