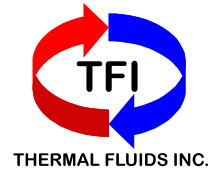


ThermalCool®



FULLY INHIBITED ETHYLENE GLYCOL HYDRONIC HEAT TRANSFER FLUID

Typical Physical Properties

- ◆ Ethylene Glycol 95%
- ◆ Inhibitor Package & Water 5%
- ◆ Color Fluorescent Yellow
- ◆ pH of solution @ 33% glycol 9.5 – 11.0
- ◆ Specific gravity @ 60/60°F 1.120 – 1.135
- ◆ Reserve Alkalinity (min) 12.0 ml

1) Freezing and Boiling points

%Glycol by Volume	Freezing Point °F	Boiling Point °F
20	17	216
30	6	220
40	-10	222
50	-33	225
60	-54	230

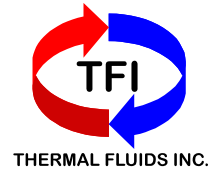
2) Technical Properties

20% ThermalCool® concentration by volume

Temp °F	Specific Heat Btu/lb °F	Density lb/ft ³	Therm. Conduct Btu/(hr.ft ²)(°F/ft)	Viscosity cps
-20	—	—	—	—
30	0.901	64.70	0.269	3.15
80	0.916	64.20	0.291	1.40
130	0.931	63.44	0.307	0.81
180	0.947	62.43	0.318	0.55
230	0.960	61.21	0.355	0.32

30% ThermalCool® concentration by volume

Temp °F	Specific Heat Btu/lb °F	Density lb/ft ³	Therm. Conduct Btu/(hr.ft ²)(°F/ft)	Viscosity cps
-20	—	—	—	—
30	0.856	65.75	0.246	4.35
80	0.875	65.18	0.265	1.84
130	0.895	64.35	0.279	1.01
180	0.914	63.28	0.288	0.64
230	0.933	61.72	0.291	0.43



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40% ThermalCool® concentration by volume

Temp °F	Specific Heat Btu/lb °F	Density lb/ft ³	Therm. Conduct Btu/(hr.ft ²)(°F/ft)	Viscosity cps
-20	—	—	—	—
30	0.813	66.70	0.228	6.10
80	0.834	66.08	0.243	2.45
130	0.856	65.20	0.254	1.30
180	0.880	64.09	0.261	0.78
230	0.902	62.70	0.290	0.53

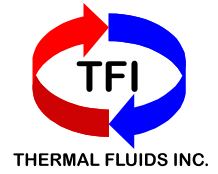
50% ThermalCool® concentration by volume

Temp °F	Specific Heat Btu/lb °F	Density lb/ft ³	Therm. Conduct Btu/(hr.ft ²)(°F/ft)	Viscosity cps
-20	0.738	68.00	0.194	40.40
30	0.766	67.57	0.210	8.49
80	0.790	66.91	0.222	3.25
130	0.817	65.97	0.233	1.60
180	0.842	64.81	0.238	0.95
230	0.866	63.41	0.241	0.60

60% ThermalCool® concentration by volume

Temp °F	Specific Heat Btu/lb °F	Density lb/ft ³	Therm. Conduct Btu/(hr.ft ²)(°F/ft)	Viscosity cps
-20	0.687	68.97	0.180	60.45
30	0.716	68.46	0.194	12.66
80	0.744	67.70	0.205	4.27
130	0.774	66.69	0.212	1.95
180	0.801	65.50	0.218	1.05
230	0.830	64.05	0.220	0.65

ThermalCool®



FULLY INHIBITED ETHYLENE GLYCOL HYDRONIC HEAT TRANSFER FLUID

3) Volumetric Measure (Sched 40 STD Steel)

Nominal Pipe size in inches	Outside Diameter in inches	Inside Diameter in inches	Gallons of Fluid per 100 ft of pipe
1/4	0.540	0.364	0.54
3/8	0.675	0.493	0.99
1/2	0.840	0.622	1.58
3/4	1.050	0.824	2.77
1	1.315	1.049	4.49
1 1/4	1.660	1.380	7.77
1 1/2	1.900	1.610	10.58
2	2.375	2.067	17.43
2 1/2	2.875	2.469	24.87
3	3.500	3.068	38.40
3 1/2	4.000	3.548	51.36
4	4.500	4.026	66.13
5	5.563	5.047	103.90
6	6.625	6.065	150.10
8	8.625	7.981	259.90

Based on ANSI B36.10-1959