

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) 11.0 ml

1) Freezing and Boiling points

%Glycol by Volume	Freezing Point °F	Boiling Point °F
20	16	217
30	4	220
40	-13	223
50	-34	226
60	-76	232

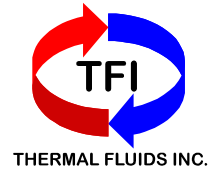
2) Technical Properties

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

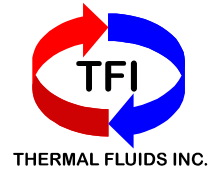
50% **ThermalCool®** concentration by volume

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

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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