PRODUCT DATA SHEET

PanAm Propylene Technical Inhibited

NFG
NON-FOOD GRADE

USP technical grade, non-toxic propylene glycol heat transfer fluid that offers excellent thermo-physical properties as well as protection from corrosion and degradation.

Viscosity

Vol. %	Wt .%	Freeze Point		Burst Point		Boiling Point	Refractive Index	Specific Gravity
PG	PG	°F	°C	°F	°C	°F	22°C (72°F)	22°C (72°F)
0	0.0	32	0	32	0.0	212	1.3328	1.000
5	5.2	29	-1.7	27	-2.7	212	1.3385	1.005
10	10.5	26	-3.3	22	-5.6	212	1.3439	1.010
15	15.6	23	-5.0	19	-7.5	212	1.3501	1.015
20	20.8	19	-7.2	11	-11.8	213	1.3665	1.020
25	25.9	14	-10.1	-1	-18.4	214	1.3626	1.025
26	27.0	13	-10.6	-4	-20.1	214	1.3629	1.026
27	28.0	12	-11.1	-7	-21.8	214	1.3651	1.027
28	29.0	10	-12.2	-10	-23.6	215	1.3663	1.028
29	30.1	9	-12.8	-14	-25.5	216	1.3676	1.029
30	31.1	8	-13.3	-18	-27.5	216	1.3689	1.030
31	32.1	7	-13.9	-21	-29.6	216	1.3699	1.031
32	33.1	5	-15.0	-24	-31.1	216	1.3711	1.032
33	34.1	4	-15.6	-30	-34.4	216	1.3722	1.032
34	35.1	2	-16.7	-38	-38.9	217	1.3734	1.033
35	36.1	1	-17.2	-46	-43.3	217	1.3745	1.034
36	37.2	-1	-18.3	-53	-47.2	217	1.3759	1.035
37	38.2	-3	-19.4	-60	-51.1	218	1.3769	1.036
38	39.2	-4	-20.0	-60	-51.1	218	1.3781	1.037
39	40.2	-6	-21.1	-60	-51.1	219	1.3792	1.038
40	41.2	-8	-22.2	-60	-51.1	219	1.3804	1.039
41	42.2	-10	-23.3	-60	-51.1	219	1.3815	1.040
42	43.2	-12	-24.4	-60	-51.1	219	1.3827	1.041
43	44.2	-14	-25.5	-60	-51.1	219	1.3838	1.042
44	45.2	-16	-26.7	-60	-51.1	220	1.3849	1.043
45	46.2	-18	-27.8	-60	-51.1	220	1.3860	1.044
46	47.2	-21	-29.4	-60	-51.1	220	1.3872	1.045
47	48.2	-23	-30.6	-60	-51.1	221	1.3883	1.046
48	49.2	-26	-32.2	-60	-51.1	221	1.3894	1.047
49	50.2	-28	-33.3	-60	-51.1	222	1.3905	1.048
50	51.2	-31	-35.0	-60	-51.1	222	1.3916	1.049
55	56.2	-46	-43.3	-60	-51.1	223	1.3968	1.052
60	61.2	<-60	-51.1	-60	-51.1	225	1.4020	1.055
65	66.1	<-60	-51.1	-60	-51.1	227	1.4067	1.057
70	71.0	<-60	-51.1	-60	-51.1	230	1.4113	1.057
80	80.8	<-60	-51.1	-60	-51.1	246	1.4201	1.059
90	90.4	<-60	-51.1			270	1.4248	1.056
95	95.2	<-60	-51.1			310	1.4315	1.052

Thermal Conductivity

Pan Am Propylene Food Grade, Viscosity, cP									
	Volume								
Temp,° F	20%	25%	30%	35%	40%	45%	50%	55%	60%
-30									498
-20									299
-10							96.0	140	183
0					40.9	51.1	61.3	88.2	115
10			13.4	20.2	27.0	33.8	40.6	57.4	74.2
20	5.36	7.63	9.89	14.2	18.5	23.2	27.8	38.6	49.3
30	4.23	5.85	7.46	10.3	13.1	16.4	19.7	26.7	33.7
40	3.41	4.58	5.75	7.68	9.60	12.0	14.3	19.0	23.7
50	2.79	3.66	4.52	5.87	7.21	8.96	10.7	13.9	17.1
60	2.32	2.97	3.62	4.59	5.56	6.85	8.13	10.4	12.6
70	1.95	2.45	2.94	3.66	4.38	5.36	6.34	7.93	9.51
80	1.66	2.05	2.43	2.98	3.52	4.28	5.04	6.19	7.34
90	1.43	1.74	2.04	2.46	2.88	3.48	4.08	4.93	5.77
100	1.25	1.49	1.73	2.07	2.4	2.88	3.35	3.99	4.62
120	0.97	1.14	1.30	1.52	1.73	2.05	2.36	2.74	3.11
140	0.78	0.90	1.01	1.16	1.31	1.53	1.75	1.99	2.22
160	0.64	0.73	0.82	0.93	1.04	1.20	1.35	1.51	1.66
180	0.54	0.61	0.68	0.77	0.85	0.97	1.08	1.19	1.29
200	0.46	0.52	0.58	0.65	0.71	0.80	0.88	0.96	1.04
220	0.40	0.45	0.50	0.56	0.61	0.68	0.74	0.80	0.86
240	0.36	0.40	0.44	0.49	0.53	0.59	0.64	0.69	0.73

Specific Heat

Pan Am Propylene Food Grade Glycol, Thermal Conductivity, Btu/hr·ft·°F									
	Volume								
Temp, °F	20%	25%	30%	35%	40%	45%	50%	55%	60%
-30									0.171
-20							0.188	0.181	0.174
-10							0.191	0.184	0.176
0					0.211	0.203	0.194	0.186	0.178
10			0.235	0.225	0.215	0.206	0.196	0.188	0.179
20	0.262	0.251	0.239	0.229	0.218	0.209	0.199	0.190	0.181
30	0.267	0.255	0.243	0.233	0.222	0.212	0.201	0.192	0.183
40	0.272	0.260	0.247	0.236	0.225	0.215	0.204	0.194	0.184
50	0.277	0.264	0.251	0.239	0.227	0.217	0.206	0.196	0.186
60	0.281	0.268	0.254	0.242	0.230	0.219	0.208	0.198	0.187
70	0.285	0.272	0.258	0.246	0.233	0.222	0.210	0.199	0.188
80	0.289	0.275	0.261	0.248	0.235	0.223	0.211	0.200	0.189
90	0.292	0.278	0.263	0.250	0.237	0.225	0.213	0.202	0.190
100	0.295	0.281	0.266	0.253	0.239	0.227	0.214	0.203	0.191
120	0.298	0.283	0.268	0.255	0.241	0.228	0.215	0.204	0.192
140	0.306	0.290	0.274	0.260	0.245	0.232	0.218	0.206	0.194
160	0.309	0.293	0.277	0.262	0.247	0.234	0.220	0.207	0.194
180	0.312	0.296	0.279	0.264	0.249	0.235	0.221	0.208	0.195
200	0.314	0.297	0.280	0.265	0.249	0.235	0.221	0.208	0.194
220	0.314	0.297	0.280	0.265	0.249	0.235	0.220	0.207	0.194

Density

Pan Am Propylene Food Grade Glycol, Specific Heat, Btu/lb·°F									
	Volume								
Temp, °F	20%	25%	30%	35%	40%	45%	50%	55%	60%
-30									
-20									0.799
-10									0.804
0							0.855	0.832	0.809
10					0.898	0.879	0.859	0.837	0.814
20			0.936	0.919	0.902	0.883	0.864	0.842	0.82
30	0.966	0.952	0.938	0.922	0.906	0.887	0.868	0.847	0.825
40	0.968	0.955	0.941	0.925	0.909	0.891	0.872	0.851	0.830
50	0.970	0.957	0.944	0.929	0.913	0.895	0.877	0.856	0.835
60	0.972	0.960	0.947	0.932	0.917	0.899	0.881	0.861	0.840
70	0.974	0.962	0.950	0.935	0.920	0.903	0.886	0.866	0.845
80	0.976	0.965	0.953	0.939	0.924	0.907	0.890	0.870	0.850
90	0.979	0.968	0.956	0.942	0.928	0.911	0.894	0.875	0.855
100	0.981	0.970	0.959	0.945	0.931	0.915	0.899	0.880	0.861
120	0.985	0.975	0.965	0.952	0.939	0.924	0.908	0.890	0.871
140	0.989	0.980	0.970	0.958	0.946	0.931	0.916	0.899	0.881
160	0.993	0.985	0.976	0.965	0.953	0.939	0.925	0.908	0.891
180	0.996	0.989	0.982	0.972	0.961	0.948	0.934	0.918	0.902
200	1.000	0.994	0.988	0.978	0.968	0.956	0.943	0.928	0.912
220	1.003	0.999	0.994	0.985	0.975	0.963	0.951	0.937	0.922
240	1.007	1.003	0.999	0.991	0.982	0.971	0.960	0.946	0.932

Vapor Pressure

Pan Am Propylene Glycol, Density, lb/ft³									
	Volume								
Temp, °F	20%	25%	30%	35%	40%	45%	50%	55%	60%
-30									67.05
-20							66.46	66.70	66.93
-10							66.35	66.58	66.81
0					65.71	65.97	66.23	66.46	66.68
10			65.00	65.30	65.60	65.86	66.11	66.33	66.54
20	64.23	64.57	64.90	65.19	65.48	65.73	65.97	66.18	66.38
30	64.14	64.47	64.79	65.07	65.35	65.59	65.82	66.02	66.22
40	64.03	64.35	64.67	64.94	65.21	65.44	65.67	65.86	66.05
50	63.92	64.23	64.53	64.80	65.06	65.28	65.50	65.69	65.87
60	63.79	64.09	64.39	64.65	64.90	65.12	65.33	65.51	65.68
70	63.66	63.95	64.24	64.49	64.73	64.94	65.14	65.31	65.47
80	63.52	63.80	64.08	64.32	64.55	64.75	64.95	65.11	65.26
90	63.37	63.64	63.91	64.14	64.36	64.55	64.74	64.89	65.04
100	63.20	63.47	63.73	63.95	64.16	64.35	64.53	64.67	64.81
120	62.85	63.09	63.33	63.54	63.74	63.90	64.06	64.19	64.32
140	62.46	62.68	62.90	63.09	63.27	63.42	63.57	63.68	63.79
160	62.03	62.23	62.43	62.60	62.76	62.90	63.03	63.13	63.22
180	61.56	61.74	61.92	62.07	62.22	62.34	62.45	62.53	62.61
200	61.05	61.21	61.37	61.50	61.63	61.73	61.83	61.90	61.97
220	60.50	60.64	60.78	60.89	61.00	61.09	61.17	61.23	61.28
240	59.91	60.03	60.15	60.25	60.34	60.41	60.47	60.51	60.55

Pan Am Propylene Glycol, Vapor Pressure, psia									
Temp, °F	Volume 20%	25%	30%	35%	40%	45%	50%	55%	60%
100	0.9	0.9	0.9	0.9	0.9				
110	1.9	1.6	1.2	1.2	1.2	1.2	1.1	1.1	1.0
120	1.7	1.7	1.6	1.5	1.5	1.5	1.5	1.5	1.4
130	2.2	2.2	2.1	2.1	2.0	2.0	1.9	1.9	1.8
140	2.8	2.8	2.7	2.7	2.6	2.6	2.5	2.4	2.3
150	3.6	3.6	3.5	3.5	3.4	3.4	3.2	3.0	3.0
160	4.6	4.5	4.4	4.4	4.3	4.2	4.1	4.0	3.8
170	5.8	5.8	5.6	5.4	5.4	5.3	5.2	5.0	4.8
180	7.2	7.1	7.0	6.9	6.7	6.6	6.5	6.2	5.9
190	9.0	8.9	8.7	8.5	8.3	8.2	8.1	7.8	7.4
200	11.0	10.9	10.7	10.5	10.2	10.1	9.9	9.5	9.1
210	13.5	13.5	13.1	12.8	12.5	12.3	12.1	11.6	11.1
220	16.4	16.4	15.9	15.6	15.2	15.0	14.8	14.2	13.6
230	19.8	19.5	19.2	18.8	18.4	17.8	17.8	17.1	16.4
240	23.8	23.4	23.0	22.5	22.0	21.7	21.4	20.6	19.7
250	28.4	27.9	27.4	26.9	26.3	26.0	25.6	24.6	23.5

Pan Am Propylene Food Grade Inhibited	
pH	8.0 - 9.0
Reserve Alkalinity	>10.50 mL
Operating Range (50%)	-50ºF to 250ºF
Flash Point	None
Color	Clear
Odor	Little or None