



Typical Freezing and Boiling Points of Aqueous Solutions of DOWTHERM™ SR-1 and DOWTHERM™ 4000†

Freezing Point		Wt % Ethylene Glycol	Vol % Ethylene Glycol	Vol % DOWTHERM SR-1	Vol % DOWTHERM 4000	Boiling Point		Refractive Degree Brix††	Index 22°C
°F	°C					°F 760 mm Hg	°C at 0.96 Barr		
32.0	0.0	0.0	0.0	0.0	0.0	212.0	100.0	0.0	1.3328
29.4	-1.4	5.0	4.4	4.6	4.8	213.0	101.0	3.8	1.3378
26.2	-3.2	10.0	8.9	9.3	9.6	214.0	101.0	6.8	1.3428
22.2	-5.4	15.0	13.6	14.2	14.7	215.0	102.0	9.9	1.3478
17.9	-7.8	20.0	18.1	19.0	19.6	216.0	102.0	13.0	1.3530
16.8	-8.4	21.0	19.2	20.1	20.8	216.0	102.0	13.7	1.3540
15.9	-8.9	22.0	20.1	21.0	21.8	216.0	102.0	14.3	1.3551
14.9	-9.5	23.0	21.0	22.0	22.7	217.0	103.0	14.8	1.3561
13.7	-10.2	24.0	22.0	23.0	23.8	217.0	103.0	15.5	1.3572
12.7	-10.7	25.0	22.9	24.0	24.8	218.0	103.0	16.1	1.3582
11.4	-11.4	26.0	23.9	25.0	25.9	218.0	103.0	16.7	1.3593
10.4	-12.0	27.0	24.8	26.0	26.8	218.0	103.0	17.3	1.3603
9.2	-12.6	28.0	25.8	27.0	27.9	219.0	104.0	17.9	1.3614
8.0	-13.3	29.0	26.7	28.0	28.9	219.0	104.0	18.6	1.3624
6.7	-14.1	30.0	27.7	29.0	30.0	220.0	104.0	19.2	1.3635
5.4	-14.8	31.0	28.7	30.2	31.1	220.0	104.0	19.8	1.3646
4.2	-15.4	32.0	29.6	31.0	32.0	220.0	104.0	20.4	1.3656
2.9	-16.2	33.0	30.6	32.0	33.1	220.0	104.0	21.0	1.3667
1.4	-17.0	34.0	31.6	33.1	34.2	220.0	104.0	21.7	1.3678
-0.2	-17.9	35.0	32.6	34.1	35.3	221.0	105.0	22.3	1.3688
-1.5	-18.6	36.0	33.5	35.1	36.3	221.0	105.0	22.9	1.3699
-3.0	-19.4	37.0	34.5	36.1	37.3	221.0	105.0	23.5	1.3709
-4.5	-20.3	38.0	35.5	37.2	38.4	221.0	105.0	24.1	1.3720
-6.4	-21.3	39.0	36.5	38.2	39.5	221.0	105.0	24.7	1.3730
-8.1	-22.3	40.0	37.5	39.3	40.6	222.0	106.0	25.3	1.3741
-9.8	-23.2	41.0	38.5	40.3	41.7	222.0	106.0	25.9	1.3752
-11.7	-24.3	42.0	39.5	41.4	42.7	222.0	106.0	26.5	1.3763
-13.5	-25.3	43.0	40.5	42.4	43.8	223.0	106.0	27.1	1.3774
-15.5	-26.4	44.0	41.5	43.5	44.9	223.0	106.0	27.7	1.3785
-17.5	-27.5	45.0	42.5	44.5	46.0	224.0	107.0	28.3	1.3796
-19.8	-28.8	46.0	43.5	45.5	47.1	224.0	107.0	28.8	1.3807
-21.6	-29.8	47.0	44.5	46.6	48.2	224.0	107.0	29.4	1.3817
-23.9	-31.1	48.0	45.5	47.6	49.2	224.0	107.0	30.0	1.3828
-26.7	-32.6	49.0	46.6	48.8	50.4	224.0	107.0	30.7	1.3838
-28.9	-33.8	50.0	47.6	49.8	51.4	225.0	107.0	31.2	1.3849

Freezing Point		Wt % Ethylene Glycol	Vol % Ethylene Glycol	Vol % DOWTHERM SR-1	Vol % DOWTHERM 4000	Boiling Point		Refractive Degree Brix ^{††}	Index 22°C
°F	°C					°F 760 mm Hg	°C at 0.96 Barr		
-31.2	-35.1	51.0	48.6	50.9	52.6	225.0	107.0	31.7	1.3859
-33.6	-36.4	52.0	49.6	51.9	53.7	225.0	107.0	32.3	1.3869
-36.2	-37.9	53.0	50.6	53.0	54.8	226.0	108.0	32.8	1.3879
-38.8	-39.3	54.0	51.6	54.0	55.8	226.0	108.0	33.3	1.3890
-42.0	-41.1	55.0	52.7	55.2	57.0	227.0	108.0	33.9	1.3900
-44.7	-42.6	56.0	53.7	56.2	58.1	227.0	108.0	34.4	1.3910
-47.5	-44.2	57.0	54.7	57.3	59.2	228.0	109.0	35.0	1.3921
-50.0	-45.6	58.0	55.7	58.3	60.3	228.0	109.0	35.5	1.3931
-52.7	-47.1	59.0	56.8	59.5	61.5	229.0	109.0	36.0	1.3942
-54.9	-48.3	60.0	57.8	60.5	62.6	230.0	110.0	36.6	1.3952
b	b	65.0	62.8	65.8	68.0	235.0	113.0	39.1	1.4003
b	b	70.0	68.3	71.5	73.9	242.0	117.0	41.7	1.4055
b	b	75.0	73.6	77.1	79.7	248.0	120.0	44.2	1.4107
-52.2	-46.8	80.0	78.9	82.6	85.4	255.0	124.0	46.6	1.4159
-34.5	-36.9	85.0	84.3	88.3	91.2	273.0	134.0	49.0	1.4208
-21.6	-29.8	90.0	89.7	93.9	97.1	285.0	141.0	51.2	1.4255
-3	-19.4	95.0	95.0	99.5	a	317.0	158.0	53.2	1.4300
32.0	0.0	0.0	0.0	0.0	0.0	212	100	0.0	1.3328
29.1	-1.6	5.0	4.8	5.0	5.1	212	100	4.8	1.3383
26.1	-3.3	10.0	9.6	10.0	10.2	212	100	8.4	1.3438
22.9	-5.1	15.0	14.5	15.1	15.4	212	100	12.9	1.3495
19.2	-7.1	20.0	19.4	20.3	20.6	213	101	15.4	1.3555
18.3	-7.6	21.0	20.4	21.3	21.7	213	101	16.0	1.3567
17.6	-8.0	22.0	21.4	22.4	22.8	213	101	16.7	1.3579
16.6	-8.6	23.0	22.4	23.4	23.8	213	101	17.4	1.3591
15.6	-9.1	24.0	23.4	24.5	24.9	213	101	18.4	1.3603
14.7	-9.6	25.0	24.4	25.5	26.0	214	101	19.0	1.3615
13.7	-10.2	26.0	25.3	26.5	26.9	214	101	19.6	1.3627
12.6	-10.8	27.0	26.4	27.6	28.1	214	101	20.2	1.3639
11.5	-11.4	28.0	27.4	28.6	29.1	215	102	20.8	1.3651
10.4	-12.0	29.0	28.4	29.7	30.2	215	102	21.4	1.3663
9.2	-12.7	30.0	29.4	30.7	31.3	216	102	22.0	1.3675
7.9	-13.4	31.0	30.4	31.8	32.3	216	102	22.7	1.3687
6.6	-14.1	32.0	31.4	32.8	33.4	216	102	23.6	1.3698
5.3	-14.8	33.0	32.4	33.9	34.5	216	102	24.4	1.3710
3.9	-15.6	34.0	33.5	35.0	35.6	216	102	25.3	1.3721
2.4	-16.4	35.0	34.4	36.0	36.6	217	103	26.1	1.3733
0.8	-17.3	36.0	35.5	37.1	37.8	217	103	26.9	1.3744
-0.8	-18.2	37.0	36.5	38.2	38.8	217	103	27.5	1.3756
-2.4	-19.1	38.0	37.5	39.2	39.9	218	103	28.0	1.3767
-4.2	-20.1	39.0	38.5	40.3	41.0	218	103	28.5	1.3779
-6.0	-21.1	40.0	39.6	41.4	42.1	219	104	29.1	1.3790

^aEthylene glycol concentrations greater than 92% are not attainable with DOWTHERM™ 4000 fluid. ^bFreezing points are below -60°F (-51°C). [†]Typical properties, not to be construed as specifications. ^{††}Degree Brix is a measure of the sugar concentration in a fluid and is important in fermentation and syrups applications. Although there is no sugar present in DOWTHERM™ Heat Transfer Fluids, the glycol affects the refractive index of the fluid in a similar fashion. NOTE: Generally, for an extended margin of protection, you should select a temperature in this table that is at least 5°F (3°C) lower than the expected lowest ambient temperature. Inhibitor levels in glycol solutions less than 25-30% may not provide adequate corrosion protection. Solutions of glycol less than 25% may be at risk for bacterial contamination.

bFreezing Point		Wt % Ethylene Glycol	Vol % Ethylene Glycol	Vol % DOWTHERM SR-1	Vol % DOWTHERM 4000	Boiling Point		Refractive Degree Brix ^{††}	Index 22°C
°F	°C					°F 760 mm Hg	°C at 0.96 Barr		
-7.8	-22.1	41.0	40.6	42.4	43.2	219	104	29.6	1.3802
-9.8	-23.2	42.0	41.6	43.5	44.3	219	104	30.2	1.3813
-11.8	-24.3	43.0	42.6	44.5	45.3	219	104	30.7	1.3825
-13.9	-25.5	44.0	43.7	45.7	46.5	219	104	31.3	1.386
-16.1	-26.7	45.0	44.7	46.7	47.6	220	104	31.8	1.3847
-18.3	-27.9	46.0	45.7	47.8	48.6	220	104	32.4	1.3858
-20.7	-29.3	47.0	46.8	48.9	49.8	220	104	33.0	1.3870
-23.1	-30.6	48.0	47.8	50.0	50.9	221	105	33.5	1.3881
-25.7	-32.1	49.0	48.9	51.1	52.0	221	105	34.1	1.3892
-28.3	-33.5	50.0	49.9	52.2	53.1	222	106	34.7	1.3903
-31.0	-35.0	51.0	50.9	53.2	54.1	222	106	35.5	1.3914
-33.8	-36.6	52.0	51.9	54.3	55.2	222	106	35.9	1.3924
-36.7	-38.2	53.0	53.0	55.4	56.4	223	106	36.6	1.3935
-39.7	-39.8	54.0	54.0	56.5	57.4	223	106	37.2	1.3945
-42.8	-41.6	55.0	55.0	57.5	58.5	223	106	38.0	1.3956
-46.0	-43.3	56.0	56.0	58.5	59.6	223	106	38.5	1.3966
-49.3	-45.2	57.0	57.0	59.6	60.6	224	107	39.0	1.3977
-52.7	-47.1	58.0	58.0	60.6	61.7	224	107	39.6	1.3987
-56.2	-49.0	59.0	59.0	61.7	62.8	224	107	40.1	1.3998
-59.9	-51.1	60.0	60.0	62.7	63.8	225	107	40.6	1.4008
b	b	65.0	65.0	68.0	69.1	227	108	42.1	1.4058
b	b	70.0	70.0	73.2	74.5	230	110	44.1	1.4104
b	b	75.0	75.0	78.4	79.8	237	114	46.1	1.4150
b	b	80.0	80.0	83.6	85.1	245	118	48.0	1.4193
b	b	85.0	85.0	88.9	90.4	257	125	50.0	1.4235
b	b	90.0	90.0	94.1	95.7	270	132	51.4	1.4275
b	b	95.0	95.0	99.3	a	310	154	52.8	1.4315

^aPropylene glycol concentrations greater than 94% are not attainable with DOWFROST™ HD fluid. ^bFreezing points are below -60°F (-51°C). [†]Typical properties, not to be construed as specifications. ^{††}Degree Brix is a measure of the sugar concentration in a fluid and is important in fermentation and syrups applications. Although there is no sugar present in DOWFROST Heat Transfer Fluids, the glycol affects the refractive index of the fluid in a similar fashion. NOTE: Generally, for an extended margin of protection, you should select a temperature in this table that is at least 5°F (3°C) lower than the expected lowest ambient temperature. Inhibitor levels in glycol solutions less than 25-30% may not provide adequate corrosion protection. Solutions of glycol less than 25% may be at risk for bacterial contamination.

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