



HEAT TRANSFER FLUIDS

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XCEL THERM[®] LV1 – Liquid Phase Engineering Properties

Liquid or vapor phase to 700°F (370°C); biphenyl-free, non-hazardous alternative to Dowtherm™ A* & Therminol[®] VP-1[†] at rated temperatures

Temperature		Viscosity		Density		Specific Heat		Thermal Conductivity		Enthalpy (Liquid)		Vapor Pressure	
°F	°C	mm ² /s (cSt)	cP	lb/ft ³	kg/m ³	BTU/lb-°F	J/g-K	BTU/ft-hr-°F	W/m-K	BTU/lb	J/g	psia	kg/cm ²
45	7.2	7.835	8.416	67.05	1074.20	0.366	1.532	0.0793	0.1372	0.0	0.0	–	–
55	12.8	6.681	7.146	66.76	1069.56	0.370	1.547	0.0790	0.1367	3.7	8.5	0.0001	0.0000
60	15.6	6.170	6.585	66.62	1067.24	0.372	1.555	0.0788	0.1364	5.5	12.9	0.0001	0.0000
80	26.7	4.487	4.747	66.04	1057.97	0.380	1.589	0.0781	0.1352	13.0	30.3	0.0004	0.0000
100	37.8	3.263	3.422	65.46	1048.70	0.388	1.623	0.0775	0.1341	20.7	48.2	0.0010	0.0001
120	48.9	2.520	2.619	64.88	1039.43	0.396	1.656	0.0768	0.1329	28.6	66.4	0.0024	0.0002
140	60.0	2.048	2.110	64.30	1030.15	0.403	1.686	0.0761	0.1317	36.5	84.9	0.0055	0.0004
160	71.1	1.712	1.748	63.73	1020.88	0.411	1.720	0.0753	0.1304	44.7	103.8	0.0119	0.0008
180	82.2	1.461	1.478	63.15	1011.61	0.418	1.750	0.0745	0.1289	52.9	123.0	0.2380	0.0017
200	93.3	1.274	1.277	62.57	1002.34	0.426	1.784	0.0738	0.1276	61.4	142.7	0.0453	0.0032
220	104.4	1.121	1.113	61.99	993.06	0.433	1.814	0.0729	0.1262	69.9	162.5	0.0819	0.0058
240	115.6	0.100	0.098	61.41	983.79	0.441	1.847	0.0721	0.1248	78.7	182.9	0.1420	0.0100
260	126.7	0.895	0.872	60.83	974.52	0.449	1.877	0.0713	0.1233	87.6	203.5	0.2371	0.0167
280	137.8	0.810	0.782	60.25	965.25	0.456	1.907	0.0704	0.1218	96.6	224.4	0.3813	0.0268
300	148.9	0.737	0.705	59.67	955.97	0.464	1.941	0.0694	0.1202	105.8	245.9	0.5937	0.0417
320	160.0	0.660	0.625	59.09	946.70	0.471	1.971	0.0685	0.1186	115.1	267.4	0.8983	0.0632
340	171.1	0.597	0.560	58.52	937.43	0.478	2.001	0.0676	0.1170	124.5	289.4	1.3255	0.0932
360	182.2	0.540	0.501	57.94	928.16	0.485	2.031	0.0667	0.1154	134.1	311.6	1.9126	0.1345
380	193.3	0.489	0.449	57.36	918.88	0.492	2.061	0.0657	0.1137	143.8	334.2	2.7052	0.1902
400	204.4	0.442	0.402	56.78	909.61	0.500	2.091	0.0647	0.1120	153.7	357.1	3.7582	0.2642
420	215.6	0.422	0.380	56.20	900.34	0.507	2.121	0.0637	0.1103	163.7	380.3	5.0923	0.3580
440	226.7	0.394	0.351	55.62	891.07	0.515	2.155	0.0626	0.1084	174.0	404.3	6.8153	0.4792
460	237.8	0.369	0.325	55.04	881.79	0.521	2.181	0.0615	0.1065	184.1	427.8	8.9813	0.6315
480	248.9	0.346	0.302	54.46	872.52	0.529	2.215	0.0605	0.1046	194.7	452.5	11.6262	0.8174
500	260.0	0.326	0.281	53.89	863.25	0.536	2.245	0.0594	0.1028	205.3	477.1	14.8938	1.0472
520	271.1	0.316	0.270	53.31	853.97	0.544	2.275	0.0583	0.1009	216.0	502.0	18.9744	1.3341
540	282.2	0.301	0.254	52.73	844.70	0.551	2.305	0.0571	0.0989	226.9	527.3	23.4278	1.6472
560	293.3	0.287	0.240	52.15	835.43	0.558	2.335	0.0559	0.0968	237.9	552.9	29.4791	2.0727
580	304.4	0.274	0.226	51.57	826.16	0.565	2.365	0.0548	0.0948	249.1	578.8	36.1528	2.5419
600	315.6	0.261	0.213	50.99	816.88	0.572	2.395	0.0535	0.0926	260.4	605.1	43.9759	3.0919
620	326.7	0.250	0.202	50.41	807.61	0.580	2.429	0.0523	0.0905	272.1	632.3	53.0235	3.7281
640	337.8	0.240	0.192	49.83	798.34	0.588	2.459	0.0510	0.0883	283.7	659.2	63.4136	4.4586
660	348.9	0.231	0.182	49.26	789.07	0.596	2.492	0.0498	0.0862	295.7	687.1	75.3070	5.2948
680	360.0	0.222	0.173	48.68	779.79	0.604	2.526	0.0486	0.0840	307.8	715.4	88.9551	6.2544
700	371.1	0.214	0.165	48.10	770.52	0.612	2.559	0.0472	0.0818	320.1	744.0	103.7129	7.2921

Data Represents typical laboratory samples and are not guaranteed for all samples

*Dowtherm is a registered trademark of Dow Chemical

†Therminol is a registered trademark of Eastman Chemical



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Liquid or vapor phase to 700°F (370°C); biphenyl-free, non-hazardous alternative to Dowtherm™ A* at rated temperatures

Temperature		Viscosity cP	Density		Specific Heat		Thermal Conductivity		Latent Heat of Vaporization		Enthalpy [†]	
°F	°C		lb/ft ³	kg/m ³	BTU/lb-°F	J/g-K	BTU/ft-hr-°F	W/m-K	BTU/lb	J/g	BTU/lb	J/g
45	7.2	0.0076	–	–	0.2319	0.5389	0.0099	0.0172	177.8	413.2	177.8	413.2
55	12.8	0.0078	–	–	0.2360	0.5484	0.0093	0.0160	176.8	410.9	180.5	419.4
60	15.6	0.0079	–	–	0.2381	0.5533	0.0093	0.0161	176.2	409.6	181.8	422.4
80	26.7	0.0083	–	–	0.2466	0.5732	0.0093	0.0162	173.9	404.1	186.9	434.4
100	37.8	0.0087	–	–	0.2551	0.5929	0.0095	0.0164	171.5	398.5	192.2	446.6
120	48.9	0.0091	0.0001	0.0011	0.2636	0.6126	0.0095	0.0165	169.1	393.0	197.7	459.4
140	60.0	0.0095	0.0001	0.0024	0.2720	0.6321	0.0097	0.0167	166.7	387.5	203.3	472.4
160	71.1	0.0099	0.0003	0.0049	0.2804	0.6516	0.0098	0.0170	164.4	382.0	209.0	485.8
180	82.2	0.0103	0.0006	0.0095	0.2887	0.6710	0.0100	0.0172	162.0	376.5	214.9	499.5
200	93.3	0.0107	0.0011	0.0175	0.2970	0.6903	0.0101	0.0175	159.6	371.0	221.0	513.7
220	104.4	0.0111	0.0019	0.0308	0.3053	0.7095	0.0102	0.0177	157.4	365.7	227.0	528.2
240	115.6	0.0115	0.0032	0.0519	0.3135	0.7287	0.0104	0.0180	155.6	361.6	234.3	544.5
260	126.7	0.0119	0.0053	0.0842	0.3217	0.7477	0.0105	0.0182	153.0	355.7	240.6	559.2
280	137.8	0.0123	0.0082	0.1318	0.3299	0.7667	0.0108	0.0186	151.0	350.9	247.6	575.3
300	148.9	0.0127	0.0125	0.1997	0.3380	0.7856	0.0109	0.0189	148.7	345.6	254.5	591.5
320	160.0	0.0131	0.0184	0.2944	0.3461	0.8044	0.0112	0.0193	146.5	340.5	261.6	607.9
340	171.1	0.0135	0.0264	0.4236	0.3542	0.8231	0.0113	0.0196	144.2	335.1	268.7	624.5
360	182.2	0.0139	0.0372	0.5963	0.3622	0.8417	0.0115	0.0200	141.9	329.8	276.0	641.4
380	193.3	0.0143	0.0514	0.8234	0.3702	0.8602	0.0118	0.0204	139.6	324.4	283.4	658.6
400	204.4	0.0147	0.0697	1.1172	0.3781	0.8787	0.0120	0.0208	137.4	319.3	291.0	676.4
420	215.6	0.0151	0.0923	1.4794	0.3860	0.8970	0.0123	0.0214	135.1	313.9	298.7	694.2
440	226.7	0.0155	0.1208	1.9360	0.3939	0.9153	0.0126	0.0218	132.8	308.5	306.7	712.8
460	237.8	0.0159	0.1558	2.4958	0.4017	0.9335	0.0128	0.0222	130.4	303.2	316.5	735.7
480	248.9	0.0163	0.1974	3.1620	0.4095	0.9516	0.0132	0.0228	128.1	297.8	322.8	750.3
500	260.0	0.0167	0.2476	3.9663	0.4172	0.9696	0.0134	0.0232	125.9	292.6	331.2	769.7
520	271.1	0.0171	0.3090	4.9498	0.4249	0.9888	0.0137	0.0238	123.6	287.2	339.6	789.2
540	282.2	0.0175	0.3739	5.9893	0.4326	1.0054	0.0141	0.2430	121.3	281.8	348.2	809.1
560	293.3	0.0179	0.4612	7.3885	0.4403	1.0232	0.0144	0.0249	118.9	276.4	356.8	829.3
580	304.4	0.0183	0.5547	8.8868	0.4479	1.0409	0.0147	0.0255	116.6	271.0	365.7	849.8
600	315.6	0.0187	0.6620	10.6058	0.4554	1.0585	0.0150	0.0260	114.4	265.8	374.7	870.9
620	326.7	0.0191	0.7835	12.5510	0.4630	1.0760	0.0154	0.0266	111.5	259.2	383.6	891.5
640	337.8	0.0195	0.9199	14.7374	0.4705	1.0934	0.0158	0.0273	108.3	251.8	392.0	911.0
660	348.9	0.0199	1.0730	17.1888	0.4779	1.1107	0.0161	0.0279	105.1	244.4	400.8	931.5
680	360.0	0.0203	1.2452	19.9476	0.4854	1.1280	0.0165	0.0286	102.0	237.0	409.8	952.3
700	371.1	0.0207	1.4267	22.8559	0.4927	1.1451	0.0169	0.0293	98.8	229.5	418.9	973.5

* Dowtherm is a registered trademark of Dow Chemical

† Enthalpy basis is liquid crystallizing point of 40°F (4.4°C)