

## Therminol® VP-2

### Vapor Phase/Liquid Phase Heat Transfer Fluid

Liquid Use Range 27°C to 400°C (81°F to 750°F)

Vapor Use Range 255°C to 400°C (495°F to 750°)

### Typical Properties

Appearance	Clear, water white liquid
Composition	Phenyl ether
Crystallizing Point	26.9°C (80.4°F)
Moisture Content	100 ppm
Flash Point (ASTM D-92)	115°C (239°F)
Autoignition Temperature (ASTM D-2155)	618°C (1144°F)
Kinematic Viscosity, at 40°C	2.48 mm <sup>2</sup> /s (cSt)
at 100°C	1.00 mm <sup>2</sup> /s (cSt)
Density at 30°C	1056 kg/m <sup>3</sup> (8.81 lb/gal)
Coefficient of Thermal Expansion at 200°C	0.000919/°C (0.000511/°F)
Surface Tension in Air at 30°C	37.9 dyn/cm
Molecular Weight	170.21
Heat of Fusion	101.1 kJ/kg (43.5 Btu/lb)
Minimum Vapor Temperatures for	
Fully Developed Turbulent Flow (Re = 10000)	
10 ft/sec, 1-in tube	204°C (400°F)
20 ft/sec, 1-in tube	178°C (352°F)
Transition Region Flow (Re = 2000)	
10 ft/sec, 1-in tube	148°C (299°F)
20 ft/sec, 1-in tube	129°C (265°F)
Normal Boiling Point	258.3°C (497.0°F)
Heat of Vaporization at Maximum Use Temp. 400°C	196 kJ/kg (84.5 Btu/lb)
Optimum Use Range, Liquid	27-400°C (81-750°F)
Vapor	255-400°C (495-750°F)
Maximum Film Temperature	425°C (800°F)
Pseudocritical Temperature	507°C (944°F)
Pseudocritical Pressure	31.4 bar (456 psia)
Pseudocritical Density	325 kg/m <sup>3</sup> (20.3 lb/ft <sup>3</sup> )

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Properties of Therminol® VP-2 Heat Transfer Fluid

PRESSURE = 14.696 psia

TEMP ----- °F	DENSITY (LIQUID) ----- lb/ft <sup>3</sup>	VAPOR PRESSURE ----- psia	HEAT CAP. (LIQUID) ----- BTU/lb-°F	ENTHALPY * (LIQUID) ----- BTU/lb	LATENT HEAT VAP. ----- BTU/lb
80.4	66.1	0.00032	0.377	29.2	166.0
90	65.8	0.00053	0.380	32.8	164.8
100	65.6	0.00089	0.384	36.6	163.5
110	65.3	0.00144	0.387	40.5	162.2
120	65.1	0.00229	0.391	44.4	160.9
130	64.8	0.00355	0.394	48.3	159.6
140	64.6	0.00540	0.398	52.2	158.4
150	64.3	0.00806	0.401	56.2	157.1
160	64.1	0.0118	0.405	60.3	155.9
170	63.8	0.0170	0.408	64.3	154.7
180	63.6	0.0241	0.412	68.4	153.5
190	63.3	0.0336	0.416	72.6	152.3
200	63.1	0.0463	0.419	76.8	151.2
210	62.8	0.0630	0.422	81.0	150.0
220	62.5	0.0845	0.426	85.2	148.9
230	62.3	0.112	0.430	89.5	147.7
240	62.0	0.147	0.433	93.8	146.6
250	61.8	0.192	0.436	98.1	145.5
260	61.5	0.247	0.440	102.5	144.4
270	61.2	0.315	0.443	106.9	143.3
280	60.9	0.398	0.447	111.4	142.2
290	60.7	0.499	0.450	115.9	141.1
300	60.4	0.621	0.454	120.4	140.0
310	60.1	0.767	0.457	124.9	139.0
320	59.8	0.941	0.461	129.5	137.9
330	59.6	1.15	0.464	134.2	136.8
340	59.3	1.39	0.468	138.8	135.8
350	59.0	1.67	0.471	143.5	134.7
360	58.7	2.00	0.475	148.2	133.7
370	58.4	2.38	0.478	153.0	132.6
380	58.1	2.82	0.482	157.8	131.6
390	57.8	3.32	0.485	162.6	130.5
400	57.5	3.89	0.488	167.5	129.5
410	57.2	4.54	0.492	172.4	128.4
420	56.9	5.27	0.495	177.3	127.4
430	56.6	6.10	0.499	182.3	126.3
440	56.3	7.03	0.502	187.3	125.2
450	56.0	8.07	0.506	192.4	124.2
460	55.7	9.22	0.509	197.4	123.1
470	55.4	10.5	0.513	202.5	122.0
480	55.1	11.9	0.516	207.7	120.9
490	54.8	13.5	0.520	212.9	119.8
496.96 BP	54.5	14.7	0.522	216.5	119.1
500	54.4	15.2	0.523	218.1	118.7
510	54.1	17.1	0.526	223.3	117.6
520	53.8	19.2	0.530	228.6	116.5

Note: BP is the normal boiling point.

\* Enthalpy basis is (hypothetical) liquid at 0 °F.

**Properties of Therminol® VP-2 Heat Transfer Fluid**

PRESSURE = 14.696 psia

TEMP	DENSITY (LIQUID)	VAPOR PRESSURE	HEAT CAP. (LIQUID)	ENTHALPY * (LIQUID)	LATENT HEAT VAP.
----- °F	----- lb/ft <sup>3</sup>	----- psia	----- BTU/lb-°F	----- BTU/lb	----- BTU/lb
530	53.4	21.5	0.534	233.9	115.3
540	53.1	24.0	0.537	239.3	114.2
550	52.8	26.7	0.540	244.7	113.0
560	52.4	29.6	0.544	250.1	111.8
570	52.0	32.8	0.548	255.5	110.6
580	51.7	36.2	0.551	261.0	109.4
590	51.3	39.8	0.555	266.6	108.2
600	51.0	43.8	0.558	272.1	106.9
610	50.6	48.1	0.562	277.7	105.7
620	50.2	52.6	0.566	283.4	104.4
630	49.8	57.5	0.569	289.1	103.0
640	49.4	62.7	0.573	294.8	101.7
650	49.0	68.2	0.577	300.5	100.3
660	48.6	74.1	0.580	306.3	98.9
670	48.2	80.4	0.584	312.1	97.5
680	47.8	87.0	0.588	318.0	96.1
690	47.4	94.1	0.592	323.9	94.6
700	46.9	102	0.596	329.8	93.0
710	46.5	109	0.600	335.8	91.5
720	46.0	118	0.604	341.8	89.9
730	45.5	127	0.609	347.9	88.2
740	45.1	136	0.613	354.0	86.5
750	44.6	145	0.618	360.2	84.8
760	44.0	156	0.623	366.4	83.0
770	43.5	166	0.628	372.6	81.2
780	43.0	178	0.634	378.9	79.2
790	42.4	189	0.640	385.3	77.3
800	41.8	202	0.646	391.7	75.2

\* Enthalpy basis is (hypothetical) liquid at 0 °F.

Properties of Therminol® VP-2 Heat Transfer Fluid

PRESSURE = 14.696 psia

TEMP ----- °F	VISCOSITY (LIQUID) ----- lb/ft-hr	VISCOSITY (LIQUID) ----- cP	TH. COND. (LIQUID) ----- BTU/ ft-hr-°F
80.4	8.40	3.47	0.0826
90	7.42	3.07	0.0822
100	6.58	2.72	0.0817
110	5.87	2.43	0.0813
120	5.27	2.18	0.0808
130	4.76	1.968	0.0803
140	4.32	1.786	0.0798
150	3.94	1.629	0.0794
160	3.61	1.492	0.0789
170	3.32	1.372	0.0784
180	3.06	1.266	0.0780
190	2.84	1.172	0.0775
200	2.63	1.089	0.0770
210	2.45	1.015	0.0765
220	2.29	0.948	0.0760
230	2.15	0.888	0.0756
240	2.02	0.834	0.0751
250	1.897	0.784	0.0746
260	1.789	0.740	0.0741
270	1.690	0.699	0.0736
280	1.600	0.661	0.0731
290	1.517	0.627	0.0726
300	1.441	0.596	0.0722
310	1.371	0.567	0.0717
320	1.306	0.540	0.0712
330	1.246	0.515	0.0707
340	1.190	0.492	0.0702
350	1.138	0.470	0.0697
360	1.090	0.451	0.0692
370	1.045	0.432	0.0687
380	1.003	0.415	0.0682
390	0.964	0.398	0.0677
400	0.927	0.383	0.0672
410	0.892	0.369	0.0667
420	0.860	0.355	0.0662
430	0.829	0.343	0.0657
440	0.800	0.331	0.0652
450	0.773	0.319	0.0646
460	0.747	0.309	0.0641
470	0.723	0.299	0.0636
480	0.700	0.289	0.0631
490	0.678	0.280	0.0626
500	0.657	0.272	0.0621
510	0.637	0.263	0.0615
520	0.619	0.256	0.0610

Properties of Therminol® VP-2 Heat Transfer Fluid

PRESSURE = 14.696 psia

TEMP ----- °F	VISCOSITY (LIQUID) ----- lb/ft-hr	VISCOSITY (LIQUID) ----- cP	TH. COND. (LIQUID) ----- BTU/ ft-hr-°F
530	0.601	0.248	0.0605
540	0.584	0.241	0.0600
550	0.568	0.235	0.0594
560	0.552	0.228	0.0589
570	0.537	0.222	0.0584
580	0.523	0.216	0.0578
590	0.510	0.211	0.0573
600	0.497	0.205	0.0568
610	0.485	0.200	0.0562
620	0.473	0.195	0.0557
630	0.462	0.191	0.0551
640	0.451	0.186	0.0546
650	0.440	0.182	0.0540
660	0.430	0.178	0.0535
670	0.420	0.174	0.0529
680	0.411	0.170	0.0524
690	0.402	0.166	0.0518
700	0.394	0.163	0.0513
710	0.385	0.159	0.0507
720	0.377	0.156	0.0501
730	0.370	0.153	0.0496
740	0.362	0.150	0.0490
750	0.355	0.147	0.0484
760	0.348	0.144	0.0479
770	0.342	0.141	0.0473
780	0.335	0.138	0.0467
790	0.329	0.136	0.0461
800	0.323	0.133	0.0455

**Properties of Therminol® VP-2 Heat Transfer Fluid**

PRESSURE = VAPOR PRESSURE

TEMP ----- °F	DENSITY (VAPOR) ----- lb/ft <sup>3</sup>	HEAT CAP. (VAPOR) ----- BTU/lb-°F	ENTHALPY (VAPOR) * ----- BTU/lb	VISCOSITY (VAPOR) ----- lb/ft-hr	TH. COND. (VAPOR) ----- BTU/ ft-hr-°F
80.4	0.000009	0.243	17.8	0.0135	0.0042
90	0.000015	0.248	20.1	0.0138	0.0044
100	0.000025	0.253	22.6	0.0140	0.0046
110	0.000040	0.258	25.2	0.0143	0.0047
120	0.000063	0.264	27.8	0.0145	0.0049
130	0.000096	0.269	30.4	0.0148	0.0051
140	0.000143	0.274	33.2	0.0150	0.0053
150	0.000210	0.279	35.9	0.0153	0.0055
160	0.000302	0.284	38.7	0.0156	0.0056
170	0.000428	0.289	41.6	0.0158	0.0058
180	0.000598	0.293	44.5	0.0161	0.0060
190	0.000821	0.298	47.5	0.0163	0.0062
200	0.00111	0.303	50.5	0.0166	0.0064
210	0.00149	0.308	53.5	0.0169	0.0066
220	0.00197	0.312	56.6	0.0171	0.0068
230	0.00258	0.317	59.8	0.0174	0.0070
240	0.00334	0.321	62.9	0.0176	0.0071
250	0.00429	0.326	66.2	0.0179	0.0073
260	0.00544	0.330	69.4	0.0182	0.0075
270	0.00685	0.335	72.8	0.0184	0.0077
280	0.00855	0.339	76.1	0.0187	0.0079
290	0.0106	0.344	79.5	0.0189	0.0081
300	0.0130	0.348	83.0	0.0192	0.0083
310	0.0159	0.352	86.5	0.0195	0.0085
320	0.0192	0.356	90.0	0.0197	0.0086
330	0.0231	0.360	93.5	0.0200	0.0088
340	0.0277	0.364	97.2	0.0202	0.0090
350	0.0329	0.368	100.8	0.0205	0.0092
360	0.0390	0.372	104.5	0.0208	0.0094
370	0.0458	0.376	108.2	0.0210	0.0096
380	0.0537	0.380	111.9	0.0213	0.0098
390	0.0626	0.384	115.7	0.0215	0.0100
400	0.0726	0.388	119.5	0.0218	0.0102
410	0.0839	0.392	123.4	0.0221	0.0104
420	0.0965	0.396	127.2	0.0223	0.0106
430	0.111	0.399	131.2	0.0226	0.0108
440	0.126	0.403	135.1	0.0228	0.0110
450	0.144	0.407	139.1	0.0231	0.0112
460	0.163	0.410	143.1	0.0234	0.0114
470	0.184	0.414	147.1	0.0236	0.0116
480	0.207	0.418	151.2	0.0239	0.0118
490	0.233	0.421	155.2	0.0241	0.0120
500	0.261	0.424	159.4	0.0244	0.0122
510	0.291	0.428	163.5	0.0246	0.0124
520	0.324	0.431	167.6	0.0249	0.0126

\* Enthalpy basis is ideal gas at 0 °F.

**Properties of Therminol® VP-2 Heat Transfer Fluid**

PRESSURE = VAPOR PRESSURE

TEMP ----- °F	DENSITY (VAPOR) ----- lb/ft <sup>3</sup>	HEAT CAP. (VAPOR) ----- BTU/lb-°F	ENTHALPY (VAPOR) * ----- BTU/lb	VISCOSITY (VAPOR) ----- lb/ft-hr	TH. COND. (VAPOR) ----- BTU/ ft-hr-°F
530	0.360	0.435	171.8	0.0252	0.0128
540	0.400	0.438	176.0	0.0254	0.0130
550	0.442	0.442	180.2	0.0257	0.0132
560	0.488	0.445	184.5	0.0259	0.0134
570	0.538	0.448	188.7	0.0262	0.0136
580	0.591	0.452	193.0	0.0264	0.0138
590	0.648	0.455	197.3	0.0267	0.0140
600	0.710	0.458	201.6	0.0269	0.0142
610	0.777	0.462	206.0	0.0272	0.0144
620	0.848	0.465	210.3	0.0274	0.0146
630	0.924	0.468	214.6	0.0277	0.0148
640	1.01	0.471	219.0	0.0279	0.0150
650	1.09	0.475	223.4	0.0282	0.0152
660	1.19	0.478	227.8	0.0284	0.0154
670	1.29	0.481	232.2	0.0287	0.0156
680	1.39	0.485	236.6	0.0289	0.0158
690	1.51	0.488	241.0	0.0292	0.0160
700	1.63	0.491	245.4	0.0294	0.0162
710	1.76	0.495	249.8	0.0297	0.0165
720	1.90	0.498	254.2	0.0299	0.0167
730	2.04	0.502	258.7	0.0302	0.0169
740	2.20	0.505	263.1	0.0304	0.0171
750	2.37	0.509	267.5	0.0306	0.0173
760	2.55	0.513	271.9	0.0309	0.0175
770	2.74	0.517	276.3	0.0311	0.0177
780	2.94	0.521	280.7	0.0314	0.0179
790	3.16	0.525	285.1	0.0316	0.0181
800	3.40	0.530	289.5	0.0319	0.0184

\* Enthalpy basis is ideal gas at 0 °F.



**Properties of Therminol® VP-2 Heat Transfer Fluid**

PRESSURE = 101.325 kPa

TEMP ----- °C	DENSITY (LIQUID) ----- kg/m <sup>3</sup>	VAPOR PRESSURE ----- kPa	HEAT CAP. (LIQUID) ----- kJ/kg·K	ENTHALPY * (LIQUID) ----- kJ/kg	LATENT HEAT VAP. ----- kJ/kg
26.9	1058	0.00218	1.577	41.4	386.0
30	1056	0.00296	1.585	46.3	384.2
35	1053	0.00475	1.598	54.3	381.5
40	1049	0.00745	1.612	62.3	378.7
45	1045	0.0114	1.625	70.4	376.0
50	1042	0.0173	1.638	78.5	373.4
55	1038	0.0256	1.652	86.8	370.7
60	1035	0.0372	1.665	95.1	368.1
65	1031	0.0534	1.678	103.4	365.5
70	1027	0.0755	1.691	111.8	363.0
75	1024	0.105	1.705	120.3	360.4
80	1020	0.145	1.718	128.9	357.9
85	1016	0.196	1.731	137.5	355.5
90	1013	0.264	1.744	146.2	353.0
95	1009	0.350	1.757	154.9	350.6
100	1005	0.461	1.771	163.8	348.1
105	1001	0.600	1.784	172.7	345.8
110	998	0.774	1.797	181.6	343.4
115	994	0.989	1.810	190.6	341.0
120	990	1.25	1.823	199.7	338.7
125	986	1.58	1.836	208.9	336.4
130	982	1.97	1.849	218.1	334.1
135	978	2.44	1.862	227.9	331.8
140	975	3.01	1.876	236.7	329.5
145	971	3.68	1.889	246.1	327.3
150	967	4.47	1.902	255.6	325.0
155	963	5.40	1.915	265.1	322.8
160	959	6.49	1.928	274.7	320.5
165	955	7.75	1.941	284.4	318.3
170	951	9.22	1.954	294.1	316.1
175	946	10.9	1.967	303.9	313.9
180	942	12.8	1.980	313.8	311.7
185	938	15.1	1.993	323.7	309.5
190	934	17.6	2.006	333.7	307.3
195	930	20.4	2.019	343.8	305.1
200	926	23.6	2.032	353.9	302.9
205	921	27.2	2.045	364.1	300.7
210	917	31.3	2.058	374.4	298.5
215	913	35.8	2.071	384.7	296.3
220	908	40.9	2.084	395.1	294.1
225	904	46.5	2.097	405.5	291.8
230	899	52.7	2.110	416.1	289.6
235	895	59.5	2.123	426.6	287.4
240	890	67.0	2.136	437.3	285.1
245	886	75.3	2.149	448.0	282.9
250	881	84.4	2.162	458.8	280.6
255	877	94.3	2.175	469.6	278.3

\* Enthalpy basis is (hypothetical) liquid at 0 °C.

## Properties of Therminol® VP-2 Heat Transfer Fluid

PRESSURE = 101.325 kPa

TEMP ----- °C	DENSITY (LIQUID) ----- kg/m <sup>3</sup>	VAPOR PRESSURE ----- kPa	HEAT CAP. (LIQUID) ----- kJ/kg·K	ENTHALPY * (LIQUID) ----- kJ/kg	LATENT HEAT VAP. ----- kJ/kg
258.31 BP	874	101	2.184	476.8	276.7
260	872	105	2.188	480.5	276.0
265	867	117	2.202	491.5	273.6
270	862	130	2.215	502.6	271.3
275	858	143	2.228	513.7	268.9
280	853	158	2.241	524.8	266.5
285	848	174	2.254	536.1	264.1
290	843	192	2.267	547.4	261.6
295	838	210	2.281	558.7	259.1
300	833	230	2.294	570.2	256.6
305	827	252	2.307	581.7	254.1
310	822	275	2.321	593.3	251.5
315	817	299	2.334	604.9	248.9
320	811	325	2.348	616.6	246.2
325	806	353	2.362	628.4	243.5
330	800	383	2.375	640.2	240.8
335	795	414	2.389	652.1	238.0
340	789	447	2.403	664.1	235.1
345	783	482	2.417	676.2	232.3
350	777	519	2.432	688.3	229.3
355	771	559	2.446	700.5	226.3
360	765	600	2.461	712.7	223.3
365	759	644	2.475	725.1	220.2
370	753	690	2.491	737.5	217.0
375	746	738	2.506	750.0	213.7
380	740	788	2.522	762.6	210.4
385	733	842	2.538	775.2	207.0
390	726	897	2.555	787.9	203.5
395	719	956	2.572	800.8	200.0
400	712	1017	2.590	813.7	196.3
405	705	1080	2.608	826.6	192.5
410	697	1147	2.628	839.7	188.7
415	689	1216	2.649	852.9	184.7
420	681	1288	2.671	866.2	180.5
425	673	1364	2.694	879.6	176.3

Note: BP is the normal boiling point.

\* Enthalpy basis is (hypothetical) liquid at 0 °C.

**Properties of Therminol® VP-2 Heat Transfer Fluid**

PRESSURE = 101.325 kPa

TEMP ----- °C	VISCOSITY (LIQUID) ----- mPa·s [cP]	VISCOSITY (LIQUID) ----- mm <sup>2</sup> /s [cSt]	TH. COND. (LIQUID) ----- W/m·K
26.9	3.47	3.28	0.1429
30	3.23	3.06	0.1425
35	2.89	2.74	0.1418
40	2.60	2.48	0.1410
45	2.35	2.25	0.1403
50	2.13	2.05	0.1396
55	1.948	1.877	0.1388
60	1.786	1.726	0.1381
65	1.644	1.594	0.1374
70	1.518	1.477	0.1366
75	1.406	1.373	0.1359
80	1.307	1.281	0.1352
85	1.218	1.198	0.1344
90	1.138	1.124	0.1337
95	1.066	1.056	0.1329
100	1.001	0.995	0.1322
105	0.942	0.940	0.1314
110	0.888	0.890	0.1307
115	0.839	0.844	0.1299
120	0.794	0.802	0.1292
125	0.753	0.763	0.1284
130	0.715	0.728	0.1277
135	0.680	0.695	0.1269
140	0.647	0.664	0.1262
145	0.617	0.636	0.1254
150	0.590	0.610	0.1246
155	0.564	0.586	0.1239
160	0.540	0.563	0.1231
165	0.517	0.542	0.1223
170	0.496	0.522	0.1216
175	0.477	0.504	0.1208
180	0.458	0.486	0.1200
185	0.441	0.470	0.1192
190	0.425	0.455	0.1185
195	0.410	0.441	0.1177
200	0.395	0.427	0.1169
205	0.382	0.414	0.1161
210	0.369	0.402	0.1153
215	0.357	0.391	0.1145
220	0.345	0.380	0.1138
225	0.334	0.370	0.1130
230	0.324	0.360	0.1122
235	0.314	0.351	0.1114
240	0.305	0.342	0.1106
245	0.296	0.334	0.1098
250	0.287	0.326	0.1090
255	0.279	0.319	0.1081

**Properties of Therminol® VP-2 Heat Transfer Fluid**

PRESSURE = 101.325 kPa

TEMP ----- °C	VISCOSITY (LIQUID) ----- mPa·s [cP]	VISCOSITY (LIQUID) ----- mm <sup>2</sup> /s [cSt]	TH. COND. (LIQUID) ----- W/m·K
260	0.272	0.311	0.1073
265	0.264	0.305	0.1065
270	0.257	0.298	0.1057
275	0.250	0.292	0.1049
280	0.244	0.286	0.1041
285	0.238	0.281	0.1033
290	0.232	0.275	0.1024
295	0.226	0.270	0.1016
300	0.221	0.265	0.1008
305	0.216	0.261	0.0999
310	0.211	0.256	0.0991
315	0.206	0.252	0.0983
320	0.201	0.248	0.0974
325	0.197	0.244	0.0966
330	0.193	0.241	0.0957
335	0.188	0.237	0.0949
340	0.184	0.234	0.0940
345	0.181	0.231	0.0932
350	0.177	0.228	0.0923
355	0.173	0.225	0.0915
360	0.170	0.222	0.0906
365	0.167	0.219	0.0897
370	0.163	0.217	0.0889
375	0.160	0.215	0.0880
380	0.157	0.213	0.0871
385	0.154	0.211	0.0862
390	0.152	0.209	0.0853
395	0.149	0.207	0.0845
400	0.146	0.205	0.0836
405	0.144	0.204	0.0827
410	0.141	0.203	0.0818
415	0.139	0.201	0.0809
420	0.136	0.200	0.0800
425	0.134	0.199	0.0791

**Properties of Therminol® VP-2 Heat Transfer Fluid**

PRESSURE = VAPOR PRESSURE

TEMP ----- °C	DENSITY (VAPOR) ----- kg/m <sup>3</sup>	HEAT CAP. (VAPOR) ----- kJ/kg·K	ENTHALPY (VAPOR) * ----- kJ/kg	VISCOSITY (VAPOR) ----- mPa·s [cP]	TH. COND. (VAPOR) ----- W/m·K
26.9	0.00015	1.016	25.9	0.00559	0.0073
30	0.00020	1.029	29.0	0.00565	0.0074
35	0.00032	1.048	34.2	0.00575	0.0077
40	0.00049	1.068	39.5	0.00584	0.0080
45	0.00074	1.088	44.9	0.00594	0.0083
50	0.00109	1.107	50.4	0.00603	0.0096
55	0.00160	1.126	56.0	0.00613	0.0088
60	0.00229	1.145	61.6	0.00622	0.0091
65	0.00323	1.164	67.4	0.00632	0.0094
70	0.00450	1.183	73.3	0.00641	0.0097
75	0.00618	1.201	79.2	0.00651	0.0100
80	0.00838	1.220	85.3	0.00660	0.0103
85	0.0112	1.238	91.5	0.00670	0.0106
90	0.0149	1.256	97.7	0.00680	0.0109
95	0.0195	1.273	104.0	0.00689	0.0112
100	0.0253	1.291	110.4	0.00699	0.0114
105	0.0325	1.309	116.9	0.00709	0.0117
110	0.0414	1.326	123.5	0.00718	0.0120
115	0.0522	1.343	130.2	0.00728	0.0123
120	0.0654	1.360	136.9	0.00738	0.0126
125	0.0812	1.377	143.7	0.00747	0.0129
130	0.100	1.393	150.6	0.00757	0.0132
135	0.123	1.410	157.6	0.00767	0.0135
140	0.149	1.426	164.7	0.00776	0.0138
145	0.180	1.442	171.9	0.00786	0.0141
150	0.217	1.458	179.1	0.00796	0.0144
155	0.259	1.474	186.4	0.00806	0.0147
160	0.308	1.490	193.8	0.00815	0.0150
165	0.364	1.506	201.2	0.00825	0.0153
170	0.428	1.521	208.7	0.00835	0.0156
175	0.501	1.536	216.3	0.00844	0.0159
180	0.584	1.551	224.0	0.00854	0.0162
185	0.677	1.566	231.7	0.00864	0.0165
190	0.783	1.581	239.5	0.00873	0.0168
195	0.901	1.596	247.4	0.00883	0.0171
200	1.03	1.611	255.3	0.00893	0.0174
205	1.18	1.625	263.3	0.00902	0.0177
210	1.34	1.639	271.2	0.00912	0.0180
215	1.52	1.654	279.5	0.00922	0.0183
220	1.72	1.668	287.7	0.00931	0.0186
225	1.94	1.682	295.9	0.00941	0.0189
230	2.19	1.695	304.2	0.00951	0.0192
235	2.45	1.709	312.5	0.00960	0.0195
240	2.74	1.723	320.9	0.00970	0.0198
245	3.05	1.736	329.4	0.00979	0.0201
250	3.40	1.750	337.9	0.00989	0.0204
255	3.77	1.763	346.4	0.00999	0.0207

\* Enthalpy basis is ideal gas at 0 °C.

**Properties of Therminol® VP-2 Heat Transfer Fluid**

PRESSURE = VAPOR PRESSURE

TEMP ----- °C	DENSITY (VAPOR) ----- kg/m <sup>3</sup>	HEAT CAP. (VAPOR) ----- kJ/kg·K	ENTHALPY (VAPOR) * ----- kJ/kg	VISCOSITY (VAPOR) ----- mPa·s [cP]	TH. COND. (VAPOR) ----- W/m·K
260	4.18	1.776	355.0	0.0101	0.0210
265	4.61	1.789	363.6	0.0102	0.0214
270	5.09	1.802	372.3	0.0103	0.0217
275	5.60	1.815	381.1	0.0104	0.0220
280	6.14	1.828	389.8	0.0105	0.0223
285	6.73	1.841	398.6	0.0106	0.0226
290	7.37	1.854	407.5	0.0107	0.0229
295	8.05	1.866	416.4	0.0108	0.0232
300	8.78	1.879	425.3	0.0108	0.0234
305	9.55	1.891	434.3	0.0109	0.0239
310	10.4	1.904	443.2	0.0110	0.0242
315	11.3	1.916	452.3	0.0111	0.0245
320	12.2	1.929	461.3	0.0112	0.0248
325	13.2	1.941	470.4	0.0113	0.0251
330	14.3	1.953	479.5	0.0114	0.0254
335	15.4	1.966	488.6	0.0115	0.0258
340	16.7	1.978	497.7	0.0116	0.0261
345	18.0	1.990	506.9	0.0117	0.0264
350	19.3	2.003	516.1	0.0118	0.0267
355	20.8	2.015	525.3	0.0119	0.0271
360	22.3	2.028	534.5	0.0120	0.0274
365	24.0	2.040	543.7	0.0120	0.0277
370	25.7	2.053	553.0	0.0121	0.0280
375	27.5	2.066	562.2	0.0122	0.0284
380	29.5	2.079	571.5	0.0123	0.0287
385	31.5	2.092	580.7	0.0124	0.0290
390	33.7	2.105	590.0	0.0125	0.0293
395	36.0	2.119	599.2	0.0126	0.0297
400	38.5	2.133	608.4	0.0127	0.0300
405	41.1	2.148	617.7	0.0128	0.0303
410	43.9	2.162	626.9	0.0129	0.0306
415	46.8	2.178	636.1	0.0130	0.0310
420	50.0	2.194	645.3	0.0130	0.0313
425	53.3	2.210	654.4	0.0131	0.0316

\* Enthalpy basis is ideal gas at 0 °C.