

**DOWTHERM™ Q****Product Type** Synthetic organic heat transfer fluid**Applications**

- Used as an alternative to hot oils in liquid-phase heat transfer applications

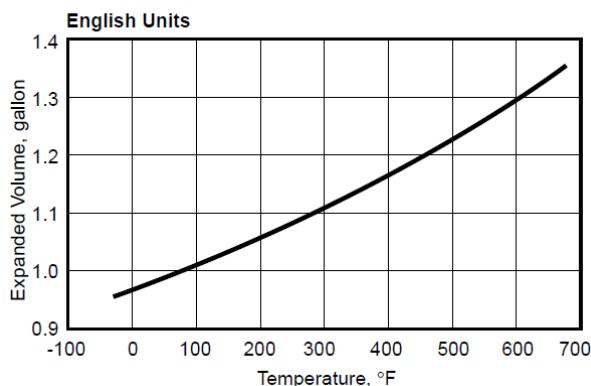
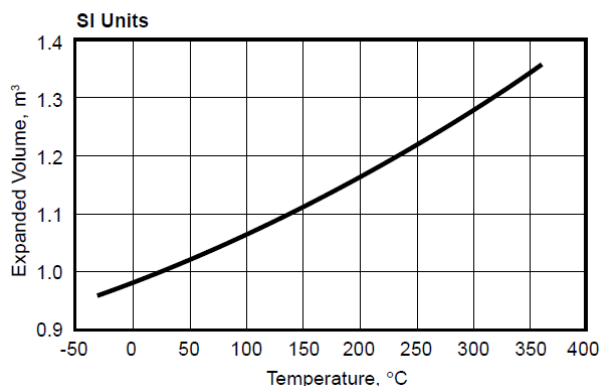
**Recommended Use Temperature Range** -35°C (-30°F) to 330°C (625°F)**Description** DOWTHERM™ Q heat transfer fluid contains a mixture of diphenylethane and alkylated aromatics. Compared to hot oils, it exhibits better thermal stability, particularly at the upper end of hot oil's use range, and significantly better low-temperature pumpability.**Typical Properties†**

Composition		
Mixture of diphenylethane and alkylated aromatics		
Color	Clear to light yellow	
Property	SI Units	English Units
Temperature Range	-35° to 330°C	-30 to 625°F
Atmospheric Reflux Boiling Point	267°C	513°F
Flash Point <sup>1</sup>	120°C	249°F
Fire Point <sup>2</sup>	124°C	255°F
Autoignition Temperature <sup>3</sup>	412°C	773°F
Film Coefficient, W/m <sup>2</sup> K (Btu/hr. ft. <sup>2</sup> F) <sup>4</sup>	295	563
<b>Flammability Limits of Vapor in Air:</b>		
Upper Flammability Limit, 5.5 Vol. % in Air	190°C	375°F
Lower Flammability Limit, 0.55 Vol. % in Air	135°C	275°F
Estimated Critical Temperature	489°C	912°F
Estimated Critical Pressure	24 bar	23.7 atm
Estimated Critical Volume	3.258 L/kg	0.0522 ft. <sup>3</sup> /lb.
Molecular Weight (average)		190

†Not to be construed as specifications.

<sup>1</sup>Closed cup<sup>2</sup>C.O.C.<sup>3</sup>ASTM E659-78<sup>4</sup>Design conditions: 550°F, V=8 ft./sec., D=1"

### Thermal Expansion of DOWTHERM Q Fluid



### Saturation Liquid Properties of DOWTHERM™ Q Fluid (English Units)

Temperature °F	Specific Heat Btu/(lb.)(°F)	Density lb./ft. <sup>3</sup>	Thermal Conductivity Btu/hr. ft. <sup>2</sup> (°F/ft.)	Viscosity (cP)	Vapor Pressure (psia)
-30	0.353	62.84	0.0741	29.0	
0	0.366	62.05	0.0730	14.7	
50	0.387	60.74	0.0712	5.42	
100	0.409	59.43	0.0693	2.50	
150	0.429	58.12	0.0672	1.38	0.01
200	0.450	56.81	0.0650	0.88	0.03
250	0.471	55.50	0.0627	0.61	0.14
300	0.491	54.18	0.0604	0.46	0.45
350	0.511	52.87	0.0580	0.36	1.22
400	0.531	51.56	0.0555	0.30	2.88
450	0.551	50.25	0.0530	0.25	6.09
500	0.570	48.94	0.0505	0.22	11.73
550	0.589	47.63	0.0480	0.20	20.93
600	0.609	46.32	0.0455	0.18	35.05
630	0.620	45.53	0.0440	0.17	46.51

### Saturation Liquid Properties of DOWTHERM™ G Fluid (SI Units)

Temperature °C	Specific Heat kJ/kg K	Density kg/m <sup>3</sup>	Thermal Conductivity W/m K	Viscosity mPa*s	Vapor Pressure (bar)
-35	1.478	1011.4	0.1280	46.60	
0	1.589	980.5	0.1244	7.56	
40	1.716	950.2	0.1195	2.37	
80	1.842	920.0	0.1143	1.07	
120	1.966	889.8	0.1087	0.62	0.01
160	2.088	859.5	0.1028	0.41	0.05
200	2.208	829.3	0.0967	0.31	0.17
240	2.327	799.0	0.0905	0.24	0.51
280	2.444	768.8	0.0843	0.20	1.24
320	2.559	738.6	0.0780	0.17	2.61
360	2.672	708.3	0.0719	0.15	4.95

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