



# HEAT TRANSFER FLUIDS

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## XCEL THERM<sup>®</sup> MK1

Chemically equivalent to DOW THERM™ A, recommended for Concentrated Solar Power Systems, PET production, Synthetic Fiber plants and many other applications that require a high temperature heat transfer fluid.

### TYPICAL PROPERTIES

#### Key Operating Temperatures

<b>Maximum Bulk Fluid Operating Temperature</b>		
Liquid Phase	750°F	400°C
Vapor Phase	750°F	400°C
Maximum Film Temperature	800°F	427°C
Crystallizing Point	53.6°F	12°C
Flash Point (PMCC)(ASTM D93)(min)	230°F	110°C
Flash Point (COC)(ASTM D92)(min)	255°F	124°C
Fire Point (ASTM D92)(min)	260°F	127°C
Autoignition Temperature (min)	1,150°F	621°C
Pumpability, at 300 mm <sup>2</sup> /s (cSt)	55.4°F	> 13°C
Normal Boiling Point at 760 mm Hg	495°F	257°C

#### Physical Properties

Appearance	Water-white to straw yellow liquid	
Odor	Aromatic	
Composition	Stable eutectic mixture of 73% Diphenyl Oxide and 27% Biphenyl	
Average Molecular Weight	166 g/mol	
Density, at 77°F/25°C	1,058 kg/m <sup>3</sup>	8.83 lbs/gal
Specific Gravity, at 25°C (77°F)	1.06	
Moisture Content (max)	300 ppm	
Critical Temperature	930.3°F	499°C
Critical Pressure	480.3 psia	3.31 MPa
Critical Density	20.4 lb/ft <sup>3</sup>	327 kg/m <sup>3</sup>
Critical Volume	0.0508 ft <sup>3</sup> /lb	3.17 L/kg
Kinematic Viscosity, at 104°F/40°C	2.48 cSt	
Kinematic Viscosity, at 212°F/100°C	0.99 cSt	
Coefficient of Thermal Expansion, at 392°F/200°C	7.317 x 10 <sup>-4</sup> /°F	9.341 x 10 <sup>-4</sup> /°C
Heat of Vaporization, at Maximum Use	123.3 BTU/lb	286.7 kJ/kg
Volume Contraction Upon Freezing	6.30%	
Volume Expansion Upon Melting	6.66%	
Heat of Fusion	41.9 BTU/lb	97.5 kJ/kg

#### Electrical Properties

Specific Resistivity, at 68°F/20°C	6.4 x 10 ohm-cm	
Surface Tension in Air, at 77°F/ 25°C	36.6 dynes/cm	

\* Data represents typical laboratory samples and are not guaranteed for all samples

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