3M Novec™ 774 Engineered Fluid

Category : Fluid

Material Notes:

3M™ Novec™ 774 Engineered Fluid is a clear, colorless and low odor fluid, and is one in a line of 3M products designed as replacements for ozone depleting substances (ODSs) and compounds with high global warming potentials (GWPs). 3M Novec 774 Engineered Fluid is an advanced heat transfer fluid, balancing customer needs for physical, thermal and electrical properties, with sustainable environmental properties, minimizing the environmental footprint left behind.Typical Applications: Novec 774 fluid is an effective heat transfer fluid with a boiling point of 74°C. Novec 774 fluid is useful in heat transfer applications, particularly where non-flammability or environmental factors are a consideration. Examples of systems which benefit from using Novec 774 fluid include:Electronics cooling (single or dual phase)Power electronics such as IGBTs or invertersTransformers and other equipmentComputer/data center coolingElectronics testing, pressure compensation, other heat transfer applicationsOrganic Rankine Cycle Diesel enginesSolar applicationsInformation provided by 3M

Order this product through the following link:
http://www.lookpolymers.com/polymer_3M-Novec-774-Engineered-Fluid.php

Physical Properties	Metric	English	Comments
Density	1.67 g/cc	0.0603 lb/in³	Liquid
	1.72 g/cc @Temperature 40.0 °C	0.0621 lb/in³ @Temperature 104 °F	Liquid
	1.745 g/cc @Temperature 30.0 °C	0.06304 lb/in³ @Temperature 86.0 °F	Liquid
	1.82 g/cc @Temperature 0.000 °C	0.0658 lb/in³ @Temperature 32.0 °F	Liquid
Viscosity	0.87 cP	0.87 cP	Absolute
Kinematic Viscosity	0.52 cSt	0.52 cSt	
Viscosity Measure	0.40 cSt @Temperature 45.0 °C	0.40 cSt @Temperature 113 °F	
	0.50 cSt @Temperature 28.0 °C	0.50 cSt @Temperature 82.4 °F	
	0.90 cSt @Temperature -10.0 °C	0.90 cSt @Temperature 14.0 °F	
	2.5 cSt @Temperature -50.0 °C	2.5 cSt @Temperature -58.0 °F	
Molecular Weight	366 g/mol	366 g/mol	

Physical Properties	Metric	English	Comments
Vapor Pressure	0.157 bar	118 torr	
Surface Tension	12.3 dynes/cm	12.3 dynes/cm	

Thermal Properties	Metric	English	Comments
CTE, linear	1500 µm/m-°C	833 µin/in-°F	
Specific Heat Capacity	1.13 J/g-°C	0.270 BTU/lb-°F	
Thermal Conductivity	0.0600 W/m-K	0.416 BTU-in/hr-ft²-°F	
	0.0550 W/m-K @Temperature 60.0 °C	0.382 BTU-in/hr-ft²-°F @Temperature 140 °F	
	0.0620 W/m-K @Temperature 0.000 °C	0.430 BTU-in/hr-ft²-°F @Temperature 32.0 °F	
	0.0680 W/m-K @Temperature -40.0 °C	0.472 BTU-in/hr-ft²-°F @Temperature -40.0 °F	
Boiling Point	74.0 °C	165 °F	
Pour Point	-78.0 °C	-108 °F	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+12 ohm-cm	1.00e+12 ohm-cm	
Dielectric Constant	1.9 @Frequency 1000 Hz	1.9 @Frequency 1000 Hz	
Dielectric Strength	>= 1.57 kV/mm	>= 40.0 kV/in	0.1" gap

Chemical Properties	Metric	English	Comments
Critical Pressure	1.71 bar	1280 torr	
Critical Temperature	195 °C	383 °F	

Descriptive Properties	Value	Comments
Solubility	20 ppm	of water in fluid

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