

3M Novec™ 7000 Engineered Fluid

Category : Fluid

Material Notes:

3M™ Novec™ 7000 Fluid unique properties make it useful as a low temperature, heat transfer fluid for cooling reactors in pharmaceutical & chemical processing. It's also ideal for low temperature automated test equipment & wafer processing equipment. Features and Benefits: Low Global Warming Potential Excellent dielectric properties Non-ozone depleting Low toxicity Non-flammable Non-corrosive Good thermal stability Useful at extreme low temperatures (to -120 Degree C) Will not damage electronic equipment in event of leakage or other equipment failure Information provided by 3M

Order this product through the following link:

http://www.lookpolymers.com/polymer_3M-Novec-7000-Engineered-Fluid.php

Physical Properties	Metric	English	Comments
Density	1.40 g/cc	0.0506 lb/in ³	Liquid
	1.47 g/cc	0.0531 lb/in ³	
	@Temperature 0.000 °C	@Temperature 32.0 °F	
	1.70 g/cc	0.0614 lb/in ³	
	@Temperature -60.0 °C	@Temperature -76.0 °F	
	1.81 g/cc	0.0654 lb/in ³	
	@Temperature -120 °C	@Temperature -184 °F	
Kinematic Viscosity	0.32 cSt	0.32 cSt	
	0.28 cSt	0.28 cSt	
	@Temperature 30.0 °C	@Temperature 86.0 °F	
	0.50 cSt	0.50 cSt	
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	1.1 cSt	1.1 cSt	
	@Temperature -60.0 °C	@Temperature -76.0 °F	
	2.0 cSt	2.0 cSt	
@Temperature -80.0 °C	@Temperature -112 °F		
	4.0 cSt	4.0 cSt	
	@Temperature -100 °C	@Temperature -148 °F	
	17 cSt	17 cSt	
	@Temperature -120 °C	@Temperature -184 °F	
Molecular Weight	200 g/mol	200 g/mol	

Physical Properties	Metric	English	Comments
Vapor Pressure	0.046 bar	400 torr	
Surface Tension	12.4 dynes/cm	12.4 dynes/cm	

Thermal Properties	Metric	English	Comments
Heat of Vaporization	142 J/g	61.1 BTU/lb	Latent
CTE, linear	2190 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	1220 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
Specific Heat Capacity	0.845 J/g- $^\circ\text{C}$	0.202 BTU/lb- $^\circ\text{F}$	
	@Temperature -120 $^\circ\text{C}$	@Temperature -184 $^\circ\text{F}$	
	1.04 J/g- $^\circ\text{C}$	0.249 BTU/lb- $^\circ\text{F}$	
	@Temperature -60.0 $^\circ\text{C}$	@Temperature -76.0 $^\circ\text{F}$	
	1.24 J/g- $^\circ\text{C}$	0.296 BTU/lb- $^\circ\text{F}$	
	@Temperature 3.00 $^\circ\text{C}$	@Temperature 37.4 $^\circ\text{F}$	
Thermal Conductivity	0.0750 W/m-K	0.521 BTU-in/hr-ft 2 - $^\circ\text{F}$	
	0.0720 W/m-K	0.500 BTU-in/hr-ft 2 - $^\circ\text{F}$	
	@Temperature 40.0 $^\circ\text{C}$	@Temperature 104 $^\circ\text{F}$	
	0.0880 W/m-K	0.611 BTU-in/hr-ft 2 - $^\circ\text{F}$	
	@Temperature -40.0 $^\circ\text{C}$	@Temperature -40.0 $^\circ\text{F}$	
	0.100 W/m-K	0.694 BTU-in/hr-ft 2 - $^\circ\text{F}$	
	@Temperature -100 $^\circ\text{C}$	@Temperature -148 $^\circ\text{F}$	
Boiling Point	34.0 $^\circ\text{C}$	93.2 $^\circ\text{F}$	
	@Pressure 0.101 MPa	@Pressure 14.7 psi	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+8 ohm-cm	1.00e+8 ohm-cm	
Dielectric Constant	7.4	7.4	
Dielectric Strength	1.57 kV/mm	40.0 kV/in	

Chemical Properties	Metric	English	Comments
Critical Pressure	24.8 bar	18600 torr	
Critical Temperature	165 $^\circ\text{C}$	329 $^\circ\text{F}$	
Critical Density	0.553 g/cc	0.0200 lb/in 3	

Chemical Properties	Metric	English	Comments
Descriptive Properties		Value	Comments
Solubility		0.35	of air in fluid
		60 ppmw	of water in fluid

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