Aptek DAT-A-THERM 1000 Electrically insulating urethane film

Category : Polymer , Adhesive , Thermoset , Polyurethane, TS , Thermoset Polyurethane, Adhesive

Material Notes:

DAT-A-THERM 1000 is a tough, flexible, void free, electrically insulating urethane film designed to fill air gaps and dissipate heat between devices and substrates. DAT-A-THERM 1000 film is a 100% solid, fully crosslinked (C-staged), thermoset urethane polymer, which will not outgas, while in place and is suitable for high vacuum environments. The film exhibits outstanding reversion resistance and physical stability under long-term aging of high humidity and heat. The ultimate in thermal conductivity and overall performance can be achieved by bonding DAT-A-THERM 1000 film to device and conductivity and overall performance can be achieved by bonding DAT-A-THERM 1000 film to device and substrate with DIS-A-PASTE 2000A/B and 2001 PMF thermally conductive urethane adhesives. Both film and adhesive system are compatible in resin and filler technologies and have been designed to be used together.Uniform filler distribution for consistent thermal dissipation capability throughput film segment; Controlled manufacturing process for a void free film; Low modulus/high elongation for minimum stress buildup under components; Low Tg-remains flexible to -70°C; Exceeds NASA outgassing requirements for high vacuum environments; Typical film thicknesses, 0.004 to 0.006 in. Custom thicknesses available; Available in sheet or die-cut formsInformation provided by Aptek Laboratories, Inc.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Aptek-DAT-A-THERM-1000-Electrically-insulating-urethane-film.php

Physical Properties	Metric	English	Comments
Density	1.96 g/cc	0.0708 lb/in³	ASTM D1475
Moisture Absorption at Equilibrium	0.15 %	0.15 %	Cured property; ASTM D570
Outgassing - Total Mass Loss	0.17 %	0.17 %	Cured property at 125°C at 10E-6 torr
Collected Volatile Condensable Material	0.010 %	0.010 %	Cured property at 125°C; at 10E-6 torr

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	7.24 MPa @Thickness 0.127 mm	1050 psi @Thickness 0.00500 in	Cured; ASTM D638
Elongation at Break	75 % @Thickness 0.127 mm	75 % @Thickness 0.00500 in	Cured; ASTM D638
Tensile Modulus	0.0138 GPa @Thickness 0.127 mm	2.00 ksi @Thickness 0.00500 in	Cured; ASTM D638

Thermal Properties	Metric	English	Comments
CTE, linear	1.00 µm/m-°C @Temperature 20.0 °C	0.556 µin/in-°F @Temperature 68.0 °F	Cured property; alpha 1

Thermal Properties	Metric	English	Comments
	147 µm/m-°C @Temperature 20.0 °C	81.7 µin/in-°F @Temperature 68.0 °F	erty; alpha 2
Thermal Conductivity	0.962 W/m-K	6.67 BTU-in/hr-ft²-°F	
Glass Transition Temp, Tg	-70.0 °C	-94.0 °F	Cured property; JMTP P-100

Electrical Properties	Metric	English	Comments
Volume Resistivity	7.00e+14 ohm-cm	7.00e+14 ohm-cm	Cured property; ASTM D257
Dielectric Constant	5.8 @Frequency 1000 Hz	5.8 @Frequency 1000 Hz	Cured property; ASTM D150
Dielectric Strength	39.4 kV/mm @Thickness 0.127 mm	1000 kV/in @Thickness 0.00500 in	Cured; ASTM D149
Dissipation Factor	0.030 @Frequency 1000 Hz	0.030 @Frequency 1000 Hz	Cured property; ASTM D150

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