

Epoxy Technology EPO-TEK® 509FM-1 General Purpose Epoxy

Category : Polymer , Thermoset , Epoxy

Material Notes:

Product Description: EPO-TEK® 509FM-1 is a two component, optically opaque epoxy designed for potting of semiconductors, PCB and systems-level electronics. It can be used in many electronic industries such as consumer, military, medical and optical/OEM. **Advantages & Application Notes:** Low viscosity resin allows for ease of pouring and potting into cavities with minimal void formation. Special care should be used when mixing large masses. Opaque black while maintaining its high insulation properties. Also, available in a thixotropic version called EPO-TEK® 509EBT-M1. Compatible with dispensing, pouring and spin coating applications. **Suggested Applications:** Optics: cutting of IR and VIS light in range of 300 to 2000 nm. Electronics: potting cables and wires into connectors, electrically isolating pins of connectors. Semiconductor: a glob top over IC's using the COB packaging format. **Information Provided by Epoxy Technology**

Order this product through the following link:

http://www.lookpolymers.com/polymer_Epoxy-Technology-EPO-TEK-509FM-1-General-Purpose-Epoxy.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.01 g/cc	1.01 g/cc	Part B
	1.16 g/cc	1.16 g/cc	Part A
Viscosity	400 - 1000 cP	400 - 1000 cP	100 rpm
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	85	85	
Tensile Modulus	2.26 GPa	328 ksi	Storage
Shear Strength	11.75 MPa	1704 psi	Lap
	>= 23.4 MPa	>= 3400 psi	Die

Thermal Properties	Metric	English	Comments
CTE, linear	55.0 µm/m-°C	30.6 µin/in-°F	Below Tg
	191 µm/m-°C	106 µin/in-°F	Above Tg
Maximum Service Temperature, Air	200 °C	392 °F	Continuous
	300 °C	572 °F	Intermittent
Minimum Service Temperature, Air	-55.0 °C	-67.0 °F	Continuous
	-55.0 °C	-67.0 °F	Intermittent
Glass Transition Temp, Tg	>= 40.0 °C	>= 104 °F	Dynamic Cure 20–200°C /ISO 25 Min;

Thermal Properties	Metric	English	Ramp 10–200 °C @ 20 °C/Min Comments
Decomposition Temperature	365 °C	689 °F	Degradation Temperature

Optical Properties	Metric	English	Comments
Transmission, Visible	<= 5.0 % @Wavelength 400 - 2500 nm	<= 5.0 % @Wavelength 400 - 2500 nm	Spectral

Electrical Properties	Metric	English	Comments
Volume Resistivity	<= 3.00e+13 ohm-cm	<= 3.00e+13 ohm-cm	
Dielectric Constant	3.65 @Frequency 1000 Hz	3.65 @Frequency 1000 Hz	
Dissipation Factor	0.0070 @Frequency 1000 Hz	0.0070 @Frequency 1000 Hz	

Processing Properties	Metric	English	Comments
Cure Time	120 min @Temperature 60.0 °C	2.00 hour @Temperature 140 °F	Minimum Bond Line
	1440 min @Temperature 23.0 °C	24.0 hour @Temperature 73.4 °F	Minimum Bond Line
Pot Life	20 min	20 min	
Shelf Life	12.0 Month @Temperature 25.0 °C	12.0 Month @Temperature 77.0 °F	

Descriptive Properties	Value	Comments
Color	Amber	Part B
	Black	Part A
Consistency	Pourable liquid	
Mix Ratio By Weight	100:65	
Number of Components	Two	
Weight Loss	0.29%	200°C
	1.14%	250°C

Descriptive Properties	3.47% Value	300°C Comments
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