

Epoxy Technology EPO-TEK® E4110 Electrically Conductive, Silver Epoxy

Category : Polymer , Thermoset , Epoxy , Epoxy, Electrically Conductive

Material Notes:

Product Description: EPO-TEK® E4110 is an electrically conductive, silver-filled epoxy paste. This two component system is designed for low temperature curing from ambient to 80°C, although other heat cures can be used. **Advantages & Application Notes:** Ease of use: smooth flowing paste allows for automated dispensing, stamping, brushing, or hand applications. In some cases, the low viscosity nature of the paste allows it to be sprayed onto targets. Suggested applications include: EMI and Rf shielding, ITO interconnects in LCDs, low temperature cryogenic cooling. Exhibits superior adhesion to a wide variety of substrates including most metals, ceramics, glass and plastics. Hybrid / Micro-electronic adhesive including die-attach and substrate attach for Rf and Microwave devices. Bright and shiny silver epoxy; provides a metallic-like layer after cure. Information Provided by Epoxy Technology

Order this product through the following link:

http://www.lookpolymers.com/polymer_Epoxy-Technology-EPO-TEK-E4110-Electrically-Conductive-Silver-Epoxy.php

Physical Properties	Metric	English	Comments
Specific Gravity	0.950 g/cc	0.950 g/cc	Part B
	3.10 g/cc	3.10 g/cc	Part A
Particle Size	<= 45 µm	<= 45 µm	
Viscosity	800 - 1600 cP	800 - 1600 cP	100 rpm
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	60	60	
Tensile Modulus	3.58 GPa	519 ksi	Storage
Shear Strength	8.729 MPa	1266 psi	Lap
	>= 11.7 MPa	>= 1700 psi	Die

Thermal Properties	Metric	English	Comments
CTE, linear	48.0 µm/m-°C	26.7 µin/in-°F	Below Tg
	150 µm/m-°C	83.3 µin/in-°F	Above Tg
Thermal Conductivity	1.37 W/m-K	9.51 BTU-in/hr-ft²-°F	
Maximum Service Temperature, Air	150 °C	302 °F	Continuous
	250 °C	482 °F	Intermittent
Minimum Service Temperature, Air	-55.0 °C	-67.0 °F	Continuous

Thermal Properties	Metric	English	Comments
Glass Transition Temp, Tg	>= 40.0 °C	>= 104 °F	Dynamic Cure 20–200°C /ISO 25 Min; Ramp -10–200°C @ 20°C/Min
Decomposition Temperature	380 °C	716 °F	Degradation Temperature; TGA

Electrical Properties	Metric	English	Comments
Volume Resistivity	<= 0.00050 ohm-cm	<= 0.00050 ohm-cm	
	<= 0.00070 ohm-cm	<= 0.00070 ohm-cm	25°C/40-60%RH/3 Day cure

Chemical Properties	Metric	English	Comments
Ionic Impurities - Na (Sodium)	23 ppm	23 ppm	
Ionic Impurities - K (Potassium)	31 ppm	31 ppm	
Ionic Impurities - Cl (Chloride)	151 ppm	151 ppm	

Processing Properties	Metric	English	Comments
Cure Time	15.0 min	0.250 hour	Minimum Bond Line
	@Temperature 150 °C	@Temperature 302 °F	
	180 min	3.00 hour	Minimum Bond Line
	@Temperature 80.0 °C	@Temperature 176 °F	
	360 min	6.00 hour	Minimum Bond Line
	@Temperature 60.0 °C	@Temperature 140 °F	
	4320 min	72.0 hour	Minimum Bond Line
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Pot Life	240 min	240 min	
Shelf Life	12.0 Month	12.0 Month	
	@Temperature 25.0 °C	@Temperature 77.0 °F	

Descriptive Properties	Value	Comments
Color	Clear/Colorless	Part B
	Silver	Part A
Consistency	Smooth flowing paste	
Ionic Impurities NH4	23 ppm	

Descriptive Properties	Value	Comments
Number of Components	Two	
Thixotropic Index	2.1	
Weight Loss	0.7%	200°C

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