

Epoxy Technology EPO-TEK® H20E-PFC Electrically Conductive, Silver Epoxy

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

Material Notes:

Product Description: EPO-TEK® H20E-PFC is a two component, semiconductor grade epoxy, designed for flip chip interconnects using a solder-free joining method. **Advantages & Application Notes:** Stencil printing of small dots or ?bumps? the size of 4 mil diameter with 8 mil pitch can be achieved Product may be applied at the wafer level or single-chip bumping of prototypes. Final system packaging can be hermetic micro-electronic cases or open-faced circuits using potting resin or housing. Low temperature cure capable between 70°C – 100°C allows for lower cost plastic substrates / housings to be used. Suggested for flip chip packaging applications found in memory devices (SRAM, DRAM), watch modules, RFID tags, smart-cards, military, and medical devices. Passes NASA low outgassing standard ASTM E595 with proper cure Compatible with Au, Cu, Ag, Ag-Pd component or substrate metallization. Recommended to be used with chips or wafers which have UBM layer already deposited. Compatible with automated dispensing equipment. Information Provided by Epoxy Technology

Order this product through the following link:

http://www.lookpolymers.com/polymer_Epoxy-Technology-EPO-TEK-H20E-PFC-Electrically-Conductive-Silver-Epoxy.php

Physical Properties	Metric	English	Comments
Specific Gravity	2.88 g/cc	2.88 g/cc	Part A
	3.31 g/cc	3.31 g/cc	Part B
Particle Size	<= 20 µm	<= 20 µm	
Viscosity	3000 - 4000 cP	3000 - 4000 cP	100 rpm
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	50	50	
Tensile Modulus	2.17 GPa	315 ksi	Storage
Shear Strength	5.86 MPa	850 psi	Lap
	>= 11.7 MPa	>= 1700 psi	Die

Thermal Properties	Metric	English	Comments
CTE, linear	21.0 µm/m-°C	11.7 µin/in-°F	Below Tg
	94.0 µm/m-°C	52.2 µin/in-°F	Above Tg
Thermal Conductivity	3.20 W/m-K	22.2 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	225 °C	437 °F	Continuous
	325 °C	617 °F	Intermittent

Minimum Service Temperature, Air Thermal Properties	-55.0 °C Metric	-67.0 °F English	Continuous Comments
	-55.0 °C	-67.0 °F	Intermittent
Glass Transition Temp, Tg	>= 80.0 °C	>= 176 °F	Dynamic Cure 20–200°C /ISO 25 Min; Ramp -10–200°C @ 20°C/Min
Decomposition Temperature	407 °C	765 °F	Degradation Temperature

Electrical Properties	Metric	English	Comments
Volume Resistivity	<= 0.00040 ohm-cm	<= 0.00040 ohm-cm	

Chemical Properties	Metric	English	Comments
Ionic Impurities - Na (Sodium)	12 ppm	12 ppm	
Ionic Impurities - K (Potassium)	12 ppm	12 ppm	
Ionic Impurities - Cl (Chloride)	199 ppm	199 ppm	

Processing Properties	Metric	English	Comments
Cure Time	0.750 min	0.0125 hour	Minimum Bond Line
	@Temperature 175 °C	@Temperature 347 °F	
	5.00 min	0.0833 hour	
	@Temperature 150 °C	@Temperature 302 °F	Minimum Bond Line
	15.0 min	0.250 hour	Minimum Bond Line
	@Temperature 120 °C	@Temperature 248 °F	
Pot Life	4320 min	4320 min	
Shelf Life	12.0 Month	12.0 Month	
	@Temperature 25.0 °C	@Temperature 77.0 °F	

Descriptive Properties	Value	Comments
Color	Silver	Part A
	Silver	Part B
Consistency	Smooth thixotropic paste	
Ionic Impurities NH4	349 ppm	
Mix Ratio By Weight	1:1	
Number of Components	Two	

Descriptive Properties	Value	Comments
Weight Loss	0.46%	200°C
	1%	250°C
	1.8%	300°C

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