Epoxy Technology EPO-TEK® H27D Electrically Conductive, Silver Epoxy

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

Material Notes:

Product Description: EPO-TEK® H27D is a two component, silver-filled epoxy adhesive designed for semiconductor and hybrid-microelectronic packaging applications.Advantages & Application Notes: Rheology provides a smooth paste with excellent handling characteristics and a reasonable pot life. It can be machine-dispensed, screen printed, stamped, or applied by hand using spatula, toothpick, or many other applicators.Suggested for the following:Semiconductor applications such as Au-plated chips, Si, GaAs, Cu or Ag based lead-frames and die-paddles, JEDEC plastic IC packaging using transfer molded encapsulation processes.Hybrid micro-electronics; active and passive SMDs on ceramic substrates, Au and Ag-Pd contact pads, chip caps and resistors, inductors, quartz crystals, oscillators, making or repairing conductive traces on the PCB, EMI/RF shielding of the package, near-hermetic sealing, component or package grounding. Packages like DIP, or TO-can format.PCB level; COB die attach, substrates can be rigid like FR4 and BT, or flex like Kapton.Passes NASA low outgassing standard ASTM E595 with proper cureDesigned to withstand TC wire bonding temperatures, or hybrid lid-seal processes exceeding 300°C.Information Provided by Epoxy Technology

Order this product through the following link:
http://www.lookpolymers.com/polymer_Epoxy-Technology-EPO-TEK-H27D-Electrically-Conductive-Silver-Epoxy.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.22 g/cc	1.22 g/cc	Part B
	3.79 g/cc	3.79 g/cc	Part A
Particle Size	<= 45 µm	<= 45 µm	
Viscosity	2500 - 4000 cP @Temperature 23.0 °C	2500 - 4000 cP @Temperature 73.4 °F	100 rpm

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	55	55	
Tensile Modulus	3.719 GPa	539.4 ksi	Storage
Shear Strength	8.880 MPa	1288 psi	Lap
	>= 35.2 MPa	>= 5100 psi	Die

Thermal Properties	Metric	English	Comments
CTE, linear	29.0 µm/m-°C	16.1 µin/in-°F	Below Tg
	116 µm/m-°C	64.4 µin/in-°F	Above Tg
Thermal Conductivity	1.20 W/m-K	8.33 BTU-in/hr-ft²-°F	
Maximum Service Temperature, Air	225 °C	437 °F	Continuous

Thermal Properties	Metric	English	Comments
Minimum Service Temperature, Air	-55.0 °C	-67.0 °F	Continuous
	-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	413 °C	775 °F	Degradation Temperature

Electrical Properties	Metric	English	Comments
Volume Resistivity	<= 0.00050 ohm-cm	<= 0.00050 ohm-cm	

Chemical Properties	Metric	English	Comments
Ionic Impurities - Na (Sodium)	25 ppm	25 ppm	
Ionic Impurities - K (Potassium)	10 ppm	10 ppm	
Ionic Impurities - Cl (Chloride)	8.0 ppm	8.0 ppm	

Processing Properties	Metric	English	Comments
Cure Time	60.0 min @Temperature 150 °C	1.00 hour @Temperature 302 °F	Minimum Bond Line
Pot Life	480 min	480 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
	Silver	Part A
Consistency	Smooth paste	
Ionic Impurities NH4	7 ppm	
Mix Ratio By Weight	10:1	
Number of Components	Two	
Thixotropic Index	1.3	
Weight Loss	0.49%	200°C

Descriptive Properties	Value	Comments
	0.5%	250°C
	0.63%	300°C

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