

Epoxy Technology EPO-TEK® H22 Electrically Conductive, Silver Epoxy

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

Material Notes:

Product Description: EPO-TEK® H22 is a two component, silver-filled epoxy system designed specifically for die bonding and sealing hybrid circuit packages. **Advantages & Application Notes:** A smooth, free flowing, slightly thixotropic paste, using a 100% solids system. It can be dispensed, screen printed, or manually applied. High Tg allows it to be used for high temperature applications. Outstanding high temperature properties and excellent solvent, chemical and moisture resistance. Extended pot life and fast curing at relatively low temperatures < 100°C. Designed to be used in the 300°C range for applications such as wire bonding operations and eutectic lid-sealing processes. Contains no solvents or thinners. Passes NASA low outgassing standard ASTM E595 with proper cure. Can be used instead of eutectic solders for near-hermetic sealing. Information Provided by Epoxy Technology

Order this product through the following link:

http://www.lookpolymers.com/polymer_Epoxy-Technology-EPO-TEK-H22-Electrically-Conductive-Silver-Epoxy.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.03 g/cc	1.03 g/cc	Part B
	2.03 g/cc	2.03 g/cc	Part A
Particle Size	<= 45 µm	<= 45 µm	
Viscosity	12000 - 20000 cP	12000 - 20000 cP	20 rpm
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	80	80	
Tensile Modulus	3.7240 GPa	540.12 ksi	Storage
Shear Strength	>= 11.7 MPa	>= 1700 psi	Die
	13.7 MPa	1980 psi	Lap

Thermal Properties	Metric	English	Comments
CTE, linear	39.0 µm/m-°C	21.7 µin/in-°F	Below Tg
	224 µm/m-°C	124 µin/in-°F	Above Tg
Thermal Conductivity	0.940 W/m-K	6.52 BTU-in/hr-ft²-°F	
Maximum Service Temperature, Air	250 °C	482 °F	Continuous
	350 °C	662 °F	Intermittent
Minimum Service Temperature, Air	-55.0 °C	-67.0 °F	Continuous

Thermal Properties	Metric	English	Comments
Glass Transition Temp, Tg	>= 100 °C	>= 212 °F	Dynamic Cure 20–200°C /ISO 25 Min; Ramp -10–200°C @ 20°C/Min
Decomposition Temperature	454 °C	849 °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)	60 ppm	60 ppm	
Ionic Impurities - K (Potassium)	6.0 ppm	6.0 ppm	
Ionic Impurities - Cl (Chloride)	175 ppm	175 ppm	

Processing Properties	Metric	English	Comments
Cure Time	5.00 min	0.0833 hour	Minimum Bond Line
	@Temperature 150 °C	@Temperature 302 °F	
	10.0 min	0.167 hour	
	@Temperature 120 °C	@Temperature 248 °F	Minimum Bond Line
	20.0 min	0.333 hour	Minimum Bond Line
	@Temperature 100 °C	@Temperature 212 °F	
Pot Life	960 min	960 min	
Shelf Life	12.0 Month	12.0 Month	
	@Temperature 25.0 °C	@Temperature 77.0 °F	

Descriptive Properties	Value	Comments
Color	Amber	Part B
	Silver	Part A
Consistency	Smooth flowing paste	
Ionic Impurities NH4	148 ppm	
Mix Ratio By Weight	100:4.5	
Number of Components	Two	
Thixotropic Index	2.36	

Descriptive Properties	Value	Comments
	0.23%	250°C
	0.42%	300°C

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