

Epoxy Technology EPO-TEK® EK1000 Epoxy

Category : Polymer , Thermoset , Epoxy

Material Notes:

Material Description: A single component, silver-filled adhesive that exhibits exceptional thermal and electrical conductivity along with a shiny silver appearance making it ideal for the demanding requirements of high power LED die attach applications. Other benefits include low viscosity and high thixotropy making it suitable for a wide range of application techniques. It is a single component version of EPO-TEK® EK2000. Information Provided by Epoxy Technology

Order this product through the following link:

http://www.lookpolymers.com/polymer_Epoxy-Technology-EPO-TEK-EK1000-Epoxy.php

Physical Properties	Metric	English	Comments
Specific Gravity	3.34 g/cc	3.34 g/cc	
Particle Size	<= 45 µm	<= 45 µm	
Viscosity	1800 - 3600 cP @Temperature 23.0 °C	1800 - 3600 cP @Temperature 73.4 °F	100 rpm

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	66	66	
Tensile Modulus	1.89 GPa	274 ksi	Storage
Shear Strength	6.96 MPa	1010 psi	Lap
	>= 11.7 MPa	>= 1700 psi	Die after 1000 hrs 85C/85%R
	>= 23.4 MPa	>= 3400 psi	Die Initial

Thermal Properties	Metric	English	Comments
CTE, linear	38.0 µm/m-°C	21.1 µin/in-°F	Below Tg
	94.0 µm/m-°C	52.2 µin/in-°F	Above Tg
Thermal Conductivity	12.6 W/m-K @Temperature 150 °C, Time 3600 sec	87.4 BTU-in/hr-ft²-°F @Temperature 302 °F, Time 1.00 hour	
	26.3 W/m-K @Temperature 150 °C, Time 3600 sec	183 BTU-in/hr-ft²-°F @Temperature 302 °F, Time 1.00 hour	+200°C/1 hr
Maximum Service Temperature, Air	200 °C	392 °F	Continuous
	300 °C	572 °F	Intermittent

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	357 °C	675 °F	Degradation Temperature

Electrical Properties	Metric	English	Comments
Volume Resistivity	<= 0.000090 ohm-cm	<= 0.000090 ohm-cm	

Chemical Properties	Metric	English	Comments
Ionic Impurities - Na (Sodium)	2.0 ppm	2.0 ppm	
Ionic Impurities - K (Potassium)	0.00 ppm	0.00 ppm	
Ionic Impurities - Cl (Chloride)	<= 10 ppm	<= 10 ppm	

Processing Properties	Metric	English	Comments
Dry Time	<= 24.0 hour	<= 24.0 hour	
Cure Time	30.0 min @Temperature 200 °C	0.500 hour @Temperature 392 °F	
Pot Life	20160 min	20160 min	
Shelf Life	12.0 Month @Temperature -40.0 °C	12.0 Month @Temperature -40.0 °F	

Descriptive Properties	Value	Comments
Color	Silver	
Consistency	Smooth thixotropic paste	
Ionic Impurities NH4	6 ppm	
Number of Components	Single	
Thixotropic Index	3.6	
Weight Loss	0.19%	200°C
	0.94%	250°C
	1.7%	300°C

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