

Epoxy Technology EPO-TEK® ED1021 Epoxy

Category : Polymer , Thermoset , Epoxy

Material Notes:

Preliminary Product Information Sheet
Material Description: A single component, silver-filled epoxy designed for low power semiconductor LED die attach applications. Unique features include its ability to achieve high thermal conductivity values at low cure temperatures and a very shiny silver appearance which enhances overall LED brightness. Other benefits include long pot-life, low viscosity and high thixotropy making it ideal for wafer level stamping as well as syringe dispensing.
Information Provided by Epoxy Technology

Order this product through the following link:

http://www.lookpolymers.com/polymer_Epoxy-Technology-EPO-TEK-ED1021-Epoxy.php

Physical Properties	Metric	English	Comments
Specific Gravity	2.80 g/cc	2.80 g/cc	
Particle Size	<= 20 µm	<= 20 µm	
Viscosity	1819 cP	1819 cP	100 rpm
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	8782 cP	8782 cP	10 rpm
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	37282 cP	37282 cP	1 rpm
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	82	82	
Tensile Modulus	0.1782 GPa	25.85 ksi	Storage

Thermal Properties	Metric	English	Comments
CTE, linear	5.20 µm/m-°C	2.89 µin/in-°F	Below Tg
	184 µm/m-°C	102 µin/in-°F	Above Tg
Thermal Conductivity	3.30 W/m-K	22.9 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	200 °C	392 °F	Continuous
	300 °C	572 °F	Intermittent
Minimum Service Temperature, Air	-55.0 °C	-67.0 °F	Continuous
	-55.0 °C	-67.0 °F	Intermittent

Glass Transition Temp, Tg Thermal Properties	$\geq 48.0\text{ }^{\circ}\text{C}$ Metric	$\geq 118\text{ }^{\circ}\text{F}$ English	Comments
Decomposition Temperature	403 °C	757 °F	Degradation Temperature

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\leq 0.00020\text{ ohm-cm}$	$\leq 0.00020\text{ ohm-cm}$	

Chemical Properties	Metric	English	Comments
Ionic Impurities - Na (Sodium)	3.0 ppm	3.0 ppm	
Ionic Impurities - K (Potassium)	1.0 ppm	1.0 ppm	
Ionic Impurities - Cl (Chloride)	$\leq 10\text{ ppm}$	$\leq 10\text{ ppm}$	

Processing Properties	Metric	English	Comments
Cure Time	30.0 min	0.500 hour	
	@Temperature 150 °C	@Temperature 302 °F	
Pot Life	129600 min	129600 min	
Shelf Life	12.0 Month	12.0 Month	
	@Temperature -40.0 °C	@Temperature -40.0 °F	

Descriptive Properties	Value	Comments
Color	Silver	
Consistency	Smooth thixotropic paste	
Die Shear	12 kg	After 1000hrs 85°C/85% RH
	12.4 kg	Initial
Ionic Impurities NH4	9 ppm	
Number of Components	Single	
Thixotropic Index	4.2	
Weight Loss	0.35%	200°C
	0.41%	250°C
	0.56%	300°C

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