

Epoxy Technology EPO-TEK® 301 Spectrally Transparent Epoxy

Category : Polymer , Thermoset , Epoxy

Material Notes:

Product Description: EPO-TEK® 301 is a two component, room temperature curing epoxy featuring very low viscosity, and excellent optical-mechanical properties.
Advantages & Application Notes: Semiconductor: optical glob top or underfill; adhesion to common wafer passivation, solder mask and flex circuits; compatible with LED die, Si, GaAs.PCB: general potting and protection over FR4, flex, or ceramic PCBs. Medical:It is NONTOXIC—complying with USP Class VI Biocompatibility standards. Suggested for medical devices such as catheters, hand and tooling, dental, and endoscopic products; adhesion to stainless steel, titanium, and most plastics; resisting sterilizing techniques like ETO, gamma, and autoclave (65°C/1 hour cure); resisting X-ray radiation; potting and protection of scintillator crystals; CT Detector packaging; adhesive for the optical beam pathway in photo-diode arrays.Compatible with CIDEX® OPA sterilization.Fiber Optic: adhesive for glass and plastic fibers; wicking into fiber bundles used in patch cords, endoscopes or sensor devices; adhesive/seal/encapsulant used for fiber packaging and components; transmission of IR up to 2500 nm; terminating fibers into ferrules; fiber coupling and splicing.Opto-electronicLCD/LED adhesive for laminating glass layers; adhesion to PET plastic; general potting, encapsulation, and protection; spectral transmission in VIS and IR light; adhesive/encapsulant for VCSEL's packaged devices; resisting yellowing per ASTM D1925; adhesive for precision optics including lens, prism, beam splitter cubes, mirrors, and diodes, found in medical, university, or research communities.NASA approved, low outgassing epoxyInformation Provided by Epoxy Technology

Order this product through the following link:

http://www.lookpolymers.com/polymer_Epoxy-Technology-EPO-TEK-301-Spectrally-Transparent-Epoxy.php

Physical Properties	Metric	English	Comments
Specific Gravity	0.870 g/cc	0.870 g/cc	Part B
	1.15 g/cc	1.15 g/cc	Part A
Viscosity	100 - 200 cP	100 - 200 cP	100 rpm
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	85	85	
Tensile Modulus	2.26 GPa	327 ksi	Storage
Shear Strength	>= 2.34 MPa	>= 340 psi	Die
	>= 13.8 MPa	>= 2000 psi	Lap

Thermal Properties	Metric	English	Comments
CTE, linear	39.0 µm/m-°C	21.7 µin/in-°F	Below Tg
	98.0 µm/m-°C	54.4 µin/in-°F	Above Tg
Maximum Service Temperature, Air	200 °C	392 °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	>= 65.0 °C	>= 149 °F	Dynamic Cure 20–200°C /ISO 25 Min; Ramp 10–200°C @ 20°C/Min
Decomposition Temperature	430 °C	806 °F	Degradation Temperature

Optical Properties	Metric	English	Comments
Refractive Index	1.519	1.519	uncured
	@Wavelength 589 nm	@Wavelength 589 nm	
Transmission, Visible	>= 95 %	>= 95 %	Spectral
	@Wavelength 1640 - 2040 nm	@Wavelength 1640 - 2040 nm	
	>= 97 %	>= 97 %	Spectral
	@Wavelength 980 - 1640 nm	@Wavelength 980 - 1640 nm	
	>= 99 %	>= 99 %	Spectral
	@Wavelength 380 - 980 nm	@Wavelength 380 - 980 nm	

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+13 ohm-cm	>= 1.00e+13 ohm-cm	
Dielectric Constant	4.0	4.0	
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dissipation Factor	0.016	0.016	
	@Frequency 1000 Hz	@Frequency 1000 Hz	

Processing Properties	Metric	English	Comments
Cure Time	60.0 min	1.00 hour	
	@Temperature 65.0 °C	@Temperature 149 °F	
	120 min	2.00 hour	
	@Temperature 65.0 °C	@Temperature 149 °F	
	1440 min	24.0 hour	
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Processing Properties	Metric	English	Comments
Shelf Life	12.0 Month @Temperature 25.0 °C	12.0 Month @Temperature 77.0 °F	

Descriptive Properties	Value	Comments
Color	Clear/Colorless	Part A
	Clear/Colorless	Part B
Consistency	Pourable liquid	
Mix Ratio By Weight	20:5	
Number of Components	Two	
Weight Loss	0.12%	200°C
	0.13%	250°C
	0.39%	300°C

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