EPO-TEK® 301

Technical Data Sheet

For Reference Only

Spectrally Transparent Epoxy

Number of Components:	Two
Mix Ratio By Weight:	20:5
Specific Gravity:	
Part A	1.15
Part B	0.87
Pot Life:	1 - 2 Hours
Shelf Life:	One year at room temperature

Minimum Bond Line Cure Schedule*:

65°C	1 Hour
23°C	24 Hours

*Note: Container(s) should be kept closed when not in use. For filled systems, mix contents of each container (A & B) thoroughly before mixing the two together. *Please see Applications Note available on our website. - MIXED VOLUME SHOULD NOT EXCEED 25 GRAMS -*

Product Description:

EPO-TEK® 301 is a two component, room temperature curing epoxy featuring very low viscosity, and excellent optical-mechanical properties.

EPO-TEK® 301 Advantages & Suggested 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; resisting X-ray radiation; potting and protection of scintillator crystals; CT Detector packaging; adhesive for the optical beam pathway in photo-diode arrays.
- 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-electronic;
  - LCD/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.

Typical Properties: ***(To be used as a guide only, not as a specification. Data below is not guaranteed. Different batches, conditions and applications yield differing results; Cure condition: varies as required; * denotes test on lot acceptance basis)***

Physical Properties:	
***Color:** **Part A:** Clear/Colorless **Part B:** Clear/Colorless	**Die Shear Strength @ 23°C:** ≥ 10 Kg / 3400 psi
***Consistency:** Pourable liquid	**Degradation Temp. (TGA):** 430°C
***Viscosity (@ 100 RPM/23°C):** 100 – 200 cPs	**Weight Loss:**
Thixotropic Index: N/A	@ **200°C:** 0.12%
***Glass Transition Temp.(Tg):** ≥ 65°C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)	@ **250°C:** 0.13% @ **300°C:** 0.39%
Coefficient of Thermal Expansion (CTE):	**Operating Temp:**
Below Tg: 39 x 10^{-6} in/in/°C	**Continuous:** - 55°C to 200°C
Above Tg: 98 x 10^{-6} in/in/°C	**Intermittent:** - 55°C to 300°C
Shore D Hardness: 85	**Storage Modulus @ 23°C:** 327,463 psi
Lap Shear Strength @ 23°C: > 2,000 psi	***Particle Size:** N/A
Optical Properties @ 23°C:	
Index of Refraction @ 23°C: 1.519 @ 589 nm	**Spectral Transmission:** > 98% @ 400-700nm | > 97% @ 700-2500nm
Electrical & Thermal Properties:	
Thermal Conductivity: N/A	**Volume Resistivity @ 23°C:** ≥ 1 x 10^{13} Ohm-cm
Dielectric Constant (1 KHz): 4.00	**Dissipation Factor (1 KHz):** 0.016

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