EPOXY TECHNOLOGY

EPO-TEK® E3001-6

Technical Data Sheet

For Reference Only

Electrically Conductive, Silver Epoxy

Number of Components:	Single	Minimum Bond Line Cure Schedule*:
Mix Ratio By Weight:	N/A	150°C 2 Minutes
Specific Gravity:	2.71	130°C 15 Minutes
Part A		
Part B		
Pot Life:	8 Hours	
Shelf Life:	6 Months at -40°C	

*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.*

Product Description:

EPO-TEK® E3001-6 is a one component, electrically and thermally conductive, snap cure, die attach epoxy. It was designed for JEDEC level IC plastic packaging of semiconductors, hybrid micro-electronics, and photonic device assembly. It is a single component version of EPO-TEK E2001-6, shipped frozen in dry ice.

EPO-TEK® E3001-6 Advantages & Application Notes:

- Capable of snap curing at relatively low temperatures, with reasonable pot-life of 8 hours.
- It may be purchased frozen in 3cc, 5cc, and 10cc syringes.
- Designed for high volume dispensing and syringe rheology. Stamping, pin transfer, printing, or manual methods can be also used.
- Suggested applications:
  - Semiconductor:
    - Snap cure of IC's onto die paddle of lead-frame. Adhesion to Si, Cu, Ag, Au.
    - Fast cure of lead-frames in magazines inside box ovens.
    - Compatible with die size up to 300 mil x 300 mil.
  - Opto-electronics / Photonics packaging:
    - Die attaching laser or photo diode chips for fiber optic modules.
    - Adhesion to surfaces such as Pt, Au, ceramic, kovar, stainless steel, and metallized glass.
    - LED die attach.
    - ITO bonding in LCDs.
  - PCB and general electronic assembly. COB die attach direct onto substrate.
- Increased pot life is available. Contact techserv@epotek.com for your best recommendation.

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: 150°C/1 hour ; * denotes test on lot acceptance basis)***

Physical Properties:	
***Color:** Silver	**Weight Loss:**
***Consistency:** Smooth thixotropic paste	**@ 200°C:** 0.17%
***Viscosity (@ 50 RPM/23°C):** 5,500 – 7,500 cPs	**@ 250°C:** 0.20%
Thixotropic Index: 2.41	**@ 300°C:** 0.28%
***Glass Transition Temp.(Tg):** ≥ 100°C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)	**Operating Temp:**
Coefficient of Thermal Expansion (CTE):	**Continuous:** - 55°C to 250°C
	Intermittent: - 55°C to 350°C
Below Tg: 50×10^{-6} in/in/°C	**Storage Modulus @ 23°C:** 293,074 psi
Above Tg: 106×10^{-6} in/in/°C	**Ions:** Cl^- 103 ppm
Shore D Hardness: 83	Na^+ 14 ppm
Lap Shear Strength @ 23°C: 1,159psi	NH_4^+ 26 ppm
Die Shear Strength @ 23°C: ≥ 3.5 Kg / 1,190 psi	K^+ 1 ppm
Degradation Temp. (TGA): 425°C	***Particle Size:** ≤ 20 Microns
Electrical Properties:	
***Volume Resistivity @ 23°C:** ≤ 0.0005 Ohm-cm	**Volume Resistivity @ 23°C (150°C/5 min cure):** 0.002 Ohm-cm
Thermal Properties:	
Thermal Conductivity: 1.29 W/mK	

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