EPOXY TECHNOLOGY

EPO-TEK® E3001-6

Technical Data Sheet

For Reference Only

Electrically Conductive, Silver-Filled Epoxy

Date: Apr 2014
Rev: III
No. of Components: Single
Specific Gravity: 2.71
Pot Life: 8 Hours
Shelf Life: Six months at -40°C

Recommended Cure: **150°C / 1 Hour**

Minimum Alternative Cure(s):
may not achieve performance properties below
150°C / 2 Minutes
130°C / 15 Minutes

NOTE: Container(s) should be kept closed when not in use. Filled systems should be stirred thoroughly before mixing and prior to use. Please see Applications Note available on our website

Product Description: EPO-TEK® E3001-6 is a single 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 in dry ice.

Typical Properties:

To be used as a guide only, not as a specification. Different batches, conditions & applications yield differing results.
Cure condition: 150°C/1 hour * denotes test on lot acceptance basis Data below is not guaranteed.

PHYSCIAL PROPERTIES:		
* **Color (before cure):**		Silver
* **Consistency**		Smooth thixotropic paste
* **Viscosity (23°C): @ 50 rpm**		5,500 - 7,500 **cPs**
Thixotropic Index:		2.4
* **Glass Transition Temp:**		≥ 100 **°C** (Dynamic Cure:20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min)
Coefficient of Thermal Expansion (CTE):		
	Below Tg:	50 x 10^{-6} **in/in°C**
	Above Tg:	106 x 10^{-6} **in/in°C**
Shore D Hardness:		83
Lap Shear @ 23°C:		1,159
Die Shear @ 23°C:		≥ 5 **Kg** 1,700 **psi**
Degradation Temp (TGA):		425 **°C**
Weight Loss:	**@ 200°C**	0.17 **%**
	@ 250°C	0.20 **%**
	@ 300°C	0.28 **%**
OperatingTemp:	**: Continuous:**	- 55**°C to** 250**°C**
	Intermittent:	- 55**°C to** 350**°C**
Storage Modulus:		707,895 **psi**
Ion Content:	**Cl:**	103 **ppm** **NA^+:** 14 **ppm**
	NH_4^+:	26 **ppm** **K^+:** 1 **ppm**
* **Particle Size:**		≤ 20 **microns**

ELECTRICAL AND THERMAL PROPERTIES:	
Thermal Conductivity:	1.54 **W/mK**
* **Volume Resistivity @ 23°C:**	≤ 0.0005 **Ohm-cm**
Volume Resistivity @ 23°C (150°C/5 min cure):	0.002 **Ohm-cm**

Epoxies and Adhesives for Demanding Applications™

This information is based on data and tests believed to be accurate. Epoxy Technology, Inc. makes no warranties (expressed or implied) as to its accuracy and assumes no liability in connection with any use of this product.

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EPO-TEK® E2001-6 Advantages & Suggested Application Notes:

- Capable of snap curing at relatively low temperatures, with reasonable pot-life of 8 hours.
- 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.

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