EPO-TEK® E2001

Technical Data Sheet
For Reference Only
Electrically Conductive, Silver Epoxy

Date:	September 2017		**Recommended Cure: 150°C / 1 Hour**
Rev:	IV		
No. of Components:	Two		Minimum Alternative Cure(s):
Mix Ratio by Weight:	100 : 3		*May not achieve performance properties listed below*
Specific Gravity:	Part A: 2.78	Part B: 1.04	170°C / 45 Seconds
Pot Life:	1 Day		160°C / 5 Minutes
Shelf Life- Bulk:	One year at room temperature		150°C / 15 Minutes

NOTES:

- Container(s) should be kept closed when not in use.
- Filled systems should be stirred thoroughly before mixing and prior to use.
- Performance properties (rheology, conductivity, others) of the product may vary from those stated on the data sheet when bi-pak/syringe packaging or post-processing of any kind is performed. Epoxy's warranties shall not apply to any products that have been reprocessed or repackaged from Epoxy's delivered status/container into any other containers of any kind, including but not limited to syringes, bi-paks, cartridges, pouches, tubes, capsules, films or other packages.

Product Description: EPO-TEK® E2001 is a two component, silver-filled, electrically conductive epoxy designed for semiconductor die attach applications using a snap-cure profile.

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

PHYSICAL PROPERTIES:		
* Color (before cure):	Part A: Silver Part B: Amber	
* Consistency:	Smooth thixotropic paste	
* Viscosity (23°C) @ 100 rpm:	2,000 - 4,100	cPs
Thixotropic Index:	2.7	
* Glass Transition Temp:	≥ 90	°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:	124	x 10^{-6} in/in°C
Shore D Hardness:	78	
Lap Shear @ 23°C:	1,391	psi
Die Shear @ 23°C:	≥ 5	Kg 1,778 psi
Degradation Temp:	428	°C
Weight Loss:		
@ 200°C:	0.04	%
@ 300°C:	0.22	%
Suggested Operating Temperature:	< 300	°C (Intermittent)
Storage Modulus:	374,999	psi
* Particle Size:	≤ 45	microns

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	0.9	W/mK
* Volume Resistivity @ 23°C:	≤ 0.0005	Ohm-cm
Volume Resistivity @ 23°C (200°C/2 minutes cure):	0.0007	Ohm-cm

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EPO-TEK® E2001 Advantages & Suggested Application Notes:

- This product is the two component version of EPO-TEK® E3001. The two component version can offer advantages such as: lower cost, room temperature shipment instead of pre-mixed and frozen dry ice shipments, and maximum pot-life observed at site.
- Versatility & Cure: snap cures of 90 seconds, fast cures of 15 minutes and traditional oven cures of 1-3 hours can be realized.
- Designed for JEDEC Level III and II packaging criteria.
- Compatible with die sizes up to 250 mil x 250 mil. Also recommended for small die such as LEDs and GaAs devices like 10 mil x 10 mil.
- Beneficial radius of curvature after die-attach cure.
- Compatible with high volume, automated syringe dispensing manufacturing processes.
- Suggested applications:
  - Semiconductor: die attach onto lead-frames such as Ag spot die paddle, COB, advanced packages, and hybrid circuits.
  - Hybrid Microelectronics: die attach bonding onto ceramic PCB, as well as attaching SMDs onto the same substrate.
  - Opto-electronics:
    - Die attach of LEDs, LED arrays, LED on PCB, or packaged onto lead-frames.
    - Die attach epoxy for near-IR chips used in IRDA (Infra Red Data Acquisition).
    - Die-attach bonding of laser diode or photo-diode for fiber optics packaging.
- Many modifications are available, including lower temperature cure, lower stress, longer pot-life, and higher thixotropic index. Contact techserv@epotek.com for your best recommendation.

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