

Number of Components:	Two	Minimum Bond Line Cure Schedule*:	
Mix Ratio By Weight:	1:1	175°C	1 Minute
Specific Gravity:		150°C	5 Minutes
Part A	1.5	120°C	15 Minutes
Part B	2.5	80°C	90 Minutes
Pot Life:	56 Hours		
Shelf Life:	One year at room temperature.		

*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<sup>®</sup> H70E is a two component, thermally conductive, electrically insulating epoxy designed for chip bonding in microelectronic and optoelectronics applications.

### EPO-TEK<sup>®</sup> H70E Advantages & Application Notes:

- Heat-sinking adhesive. It is particularly recommended for thermal management applications where good heat dissipation is necessary.
- The excellent handling characteristics and the long pot life at room temperature for this unique, two component system is obtained without the use of solvents.
- Easy to use. It can be screen printed, machine dispensed, stamped, or hand applied.
- Die-attach adhesive designed to be used in the 300°C range to resist TC wire bonding operations. Meets JEDEC Level III and II packaging criteria.
- Excellent adhesion to ferrous and non-ferrous metals, lead-frame die paddle, glass, ceramic, kovar, and PCB.
- Can be cured very rapidly; excellent material to use for making fast circuit repairs; can be snap-cured for in-line semiconductor die-bonding.
- NASA APPROVED for space flight programs; <http://outgassing.nasa.gov/>

**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: Part A: Grey Part B: Light Grey	Weight Loss:
*Consistency: Slightly pourable paste	@ 200°C: 0.24%
*Viscosity (@ 50 RPM/23°C): 4,000 – 7,000 cPs	@ 250°C: 0.75%
Thixotropic Index: 1.17	@ 300°C: 1.60%
*Glass Transition Temp.(Tg): ≥ 80°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 200°C
Below Tg: 15 x 10 <sup>-6</sup> in/in/°C	Intermittent: - 55°C to 300°C
Above Tg: 64 x 10 <sup>-6</sup> in/in/°C	Storage Modulus @ 23°C: 787,350 psi
Shore D Hardness: 83	Ions: Cl <sup>-</sup> 186 ppm
Lap Shear Strength @ 23°C: > 2,000 psi	Na <sup>+</sup>
Die Shear Strength @ 23°C: ≥ 10 Kg / 3,400 psi	NH <sub>4</sub> <sup>+</sup>
Degradation Temp. (TGA): 451°C	K <sup>+</sup>
	*Particle Size: ≤ 50 Microns
Thermal Properties:	
Thermal Conductivity: 0.9 W/mK	
Electrical Properties:	
Dielectric Constant (1 KHz): 4.22	Volume Resistivity: ≥ 1 x 10 <sup>13</sup> Ohm-cm
Dissipation Factor (1 KHz): 0.004	

### EPOXY TECHNOLOGY, INC.

14 Fortune Drive, Billerica, MA 01821-3972 Phone: 978.667.3805 Fax: 978.663.9782

[www.EPOTEK.com](http://www.EPOTEK.com)

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