

Number of Components:	Single	Minimum Bond Line Cure Schedule*:	
Mix Ratio By Weight:	N/A	150°C	1 Hour
Specific Gravity:	2.2		
Part A			
Part B			
Pot Life:	28 Days		
Shelf Life:	3 months at room temperature		

Note: Container(s) should be kept closed when not in use. For filled systems, mix contents of container thoroughly before use.

\*Please see Applications Note available on our website.

### Product Description:

EPO-TEK<sup>®</sup> H31 is a single component, silver-filled, electrically conductive epoxy designed for semiconductor die attach applications found in hybrids, JEDEC, and opto-electronic packaging.

### EPO-TEK<sup>®</sup> H31 Advantages & Application Notes:

- Bright /shiny silver provides high reflectance, especially good for enhancing LED overall brightness.
- Creamy thixotropic paste allows for high volume dispensing and pin transfer methods of application.
- Available in several different viscosity versions. Contact [techserv@epotek.com](mailto:techserv@epotek.com) for your best recommendation.
- Suggested applications:
  - Semiconductor: die attach chips onto lead-frames for JEDEC Level III and II packaging. Adhesion to Ag-spot lead-frame.
  - Hybrids: GaAs and Si die attach, adhesion to Au-plated chips, general electrical contacts for ceramic circuits, substrate attach to ground package.
  - Opto-electronic: single LED packaging in TO-cans, LED arrays on PCB or substrate, adhesion to ITO in LCDs, and sensor device/OEM instrumentation.
  - PCB/General: EMI or Rf shielding of electronics.
- Passes NASA low outgassing standard ASTM E595 with proper cure - <http://outgassing.nasa.gov/>
- Long pot-life, up to 28 days, yields low waste between manufacturing shifts and avoids higher cost dry ice shipments.

**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 paste	@ 200°C:
*Viscosity (@ 5 RPM/23°C): 15,000 – 25,000 cPs	@ 250°C: 0.06%
Thixotropic Index: 3	@ 300°C:
*Glass Transition Temp.(Tg): ≥ 110°C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—250°C @ 20°C/Min)	Operating Temp:
Coefficient of Thermal Expansion (CTE):	Continuous: - 55°C to 200°C
Below Tg: 48 x 10 <sup>-6</sup> in/in/°C	Intermittent: - 55°C to 300°C
Above Tg: 201 x 10 <sup>-6</sup> in/in/°C	Storage Modulus @ 23°C: 824,640 psi
Shore D Hardness: 84	Ions: Cl <sup>-</sup> 7 ppm
Lap Shear Strength @ 23°C: 1,320 psi	Na <sup>+</sup> 143 ppm
Die Shear Strength @ 23°C: ≥ 5 Kg / 1,700 psi	NH <sub>4</sub> <sup>+</sup> 8 ppm
Degradation Temp. (TGA): 370°C	K <sup>+</sup> 41 ppm
	*Particle Size: ≤ 45 Microns
Electrical Properties:	
*Volume Resistivity @ 23°C: ≤ 0.0005 Ohm-cm	
Thermal Properties:	
Thermal Conductivity: 1.1 W/mK	

### 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)

*Epoxyes 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.