EPOXY TECHNOLOGY

EPO-TEK® H31LV

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	1 Hour
Specific Gravity:	1.57		
Part A			
Part B			
Pot Life:	3 Days		
Shelf Life:	Six months refrigerated		

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® H31LV is a single component, silver-filled, electrically conductive epoxy designed for semiconductor die attach applications found in hybrids, JEDEC, and opto-electronic packaging. Low viscosity version of EPO-TEK® H31.

EPO-TEK® H31LV Advantages & Application Notes:

- Bright /shiny silver provides high reflectance, especially good for enhancing LED overall brightness.
- Rheology described as pourable paste:
  - Allows for high volume dispensing, wafer-level stamping, and pin transfer methods of application.
  - It is capable of spray coating or paint brush coating.
- Suggested applications:
  - Semiconductor: die attach chips onto lead-frames for JEDEC Level III and II packaging. Adhesion to Ag-spot leadframe.
  - 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
- Available in several different viscosity versions. 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, pourable paste	**@ 200°C:** 0.13%
***Viscosity (@ 100 RPM/23°C):** 2,000 – 3,500 cPs	**@ 250°C:** 0.27%
Thixotropic Index: 1.8	**@ 300°C:** 1.05%
***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
	Intermittent: - 55°C to 300°C
Below Tg: 26 x 10^{-6} in/in/°C	**Storage Modulus @ 23°C:** 257,143 psi
Above Tg: 148 x 10^{-6} in/in/°C	**Ions:** Cl^- 14 ppm
Shore D Hardness: 85	Na^+ 380 ppm
Lap Shear Strength @ 23°C: 1,400 psi	NH_4^+ 8 ppm
Die Shear Strength @ 23°C: ≥ 5 Kg / 1,700 psi	K^+ 47 ppm
Degradation Temp. (TGA): 387°C	***Particle Size:** ≤ 45 Microns
Electrical Properties:	
***Volume Resistivity @ 23°C:** ≤ 0.008 Ohm-cm	
Thermal Properties:	
Thermal Conductivity: 0.55 W/mK	

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