

## Epoxy Technology EPO-TEK® H31LV Electrically Conductive, Silver Epoxy

Category : Polymer , Thermoset , Epoxy , Epoxy, Electrically Conductive

### Material Notes:

**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. 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. Information Provided by Epoxy Technology

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Epoxy-Technology-EPO-TEK-H31LV-Electrically-Conductive-Silver-Epoxy.php](http://www.lookpolymers.com/polymer_Epoxy-Technology-EPO-TEK-H31LV-Electrically-Conductive-Silver-Epoxy.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.57 g/cc	1.57 g/cc	
Particle Size	<= 45 µm	<= 45 µm	
Viscosity	2000 - 3500 cP @Temperature 23.0 °C	2000 - 3500 cP @Temperature 73.4 °F	100 rpm

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	85	85	
Tensile Modulus	1.77 GPa	257 ksi	Storage
Shear Strength	9.65 MPa	1400 psi	Lap
	>= 11.7 MPa	>= 1700 psi	Die

Thermal Properties	Metric	English	Comments
CTE, linear	26.0 µm/m-°C	14.4 µin/in-°F	Below Tg
	148 µm/m-°C	82.2 µin/in-°F	Above Tg
Thermal Conductivity	0.550 W/m-K	3.82 BTU-in/hr-ft <sup>2</sup> -°F	
Maximum Service Temperature, Air	200 °C	392 °F	Continuous
	300 °C	572 °F	Intermittent

Minimum Service Temperature, Air Thermal Properties	-55.0 °C Metric	-67.0 °F English	Continuous Comments
	-55.0 °C	-67.0 °F	Intermittent
Glass Transition Temp, Tg	>= 110 °C	>= 230 °F	Dynamic Cure 20–200°C /ISO 25 Min; Ramp -10–250°C @ 20°C/Min
Decomposition Temperature	387 °C	729 °F	Degradation Temperature

Electrical Properties	Metric	English	Comments
Volume Resistivity	<= 0.0080 ohm-cm	<= 0.0080 ohm-cm	

Chemical Properties	Metric	English	Comments
Ionic Impurities - Na (Sodium)	380 ppm	380 ppm	
Ionic Impurities - K (Potassium)	47 ppm	47 ppm	
Ionic Impurities - Cl (Chloride)	14 ppm	14 ppm	

Processing Properties	Metric	English	Comments
Cure Time	60.0 min @Temperature 150 °C	1.00 hour @Temperature 302 °F	Minimum Bond Line
Pot Life	4320 min	4320 min	
Shelf Life	6.00 Month	6.00 Month	refrigerated

Descriptive Properties	Value	Comments
Color	Silver	
Consistency	Smooth, pourable paste	
Ionic Impurities NH4	8 ppm	
Number of Components	Single	
Thixotropic Index	1.8	
Weight Loss	0.13%	200°C
	0.27%	250°C
	1.05%	300°C

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