

Number of Components:	Two	Minimum Bond Line Cure Schedule*:	
Mix Ratio By Weight:	100:3	150°C	15 minutes
Specific Gravity:			
Part A	2.95		
Part B	1.04		
Pot Life:	6 Hours		
Shelf Life:	Six months 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> E2116 is a two component, silver-filled and stencil printable electrically conductive adhesive for bonding SMDs onto PCB and substrates. Can be used as a "lead-free" alternative in circuit assembly applications found in semiconductor, medical, consumer and hybrid/military industries.

#### EPO-TEK<sup>®</sup> E2116 Advantages & Application Notes:

- The thixotropic and paste-like rheology allows for application by screen or stencil printing techniques. It was designed to be printed for SMT joining similar to printing solder paste. It may also be hand applied or dispensed.
- A "lead-free" solution for PCB level circuit assemblies. It is suggested to use this epoxy with SMDs that do not contain Pb plated leads. Preferable to solder:
  - Lead-free can be an environmental advantage
  - Silver epoxy curing at 150°C is a lower temperature solution than 180-220°C SMT solder reflow.
  - Electrically conductive adhesives can be used on flip chips and ultra-fine pitch count SMDs, avoiding the problems of solder bridging.
- NASA approved low outgassing epoxy; <http://outgassing.nasa.gov/>
- Can be used on mixed technology hybrid substrates or PCBs. Adhesive deposit, pick-and-place, and cure can be accomplished in single step fashion.
- Alternate versions are available - contact [techserv@epotek.com](mailto:techserv@epotek.com) for best recommendation.
- Suggested surface finishes, contact pads, or leads: Ag, Ag-Pd, Au, and Cu. Compatible with PCBs including FR4, BT, ceramic, and flex circuits.

**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: Silver Part B: Amber	Weight Loss:
*Consistency: Viscous Paste	@ 200°C:
*Viscosity (@ 1 RPM/23°C): 65,000 – 90,000 cPs	@ 250°C:
Thixotropic Index: N/A	@ 300°C: 0.66%
*Glass Transition Temp.(Tg): ≥ 100°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 200C
Below Tg: 43 x 10 <sup>-6</sup> in/in/°C	Intermittent: - 55°C to 300°C
Above Tg: 142 x 10 <sup>-6</sup> in/in/°C	Storage Modulus @ 23°C: 555,735 psi
Shore D Hardness: 80	Ions: Cl <sup>-</sup> 153 ppm
Lap Shear Strength @ 23°C: 1,650 psi	Na <sup>+</sup> Not detectable
Die Shear Strength @ 23°C: ≥ 10 Kg / 3,400 psi	NH <sub>4</sub> <sup>+</sup> 107 ppm
Degradation Temp. (TGA): 405°C	K <sup>+</sup> Not detectable
	*Particle Size: ≤ 20 Microns
Electrical Properties:	
*Volume Resistivity @ 23°C: ≤ 0.0005 Ohm-cm	
Thermal Properties:	
Thermal Conductivity: 1.19 W/mK	

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