EPO-TEK® E415G

Technical Data Sheet

For Reference Only

Electrically Conductive Epoxy (formerly EE129-6)

Number of Components:	Two
Mix Ratio By Weight:	1:1
Specific Gravity:	
Part A	3.47
Part B	3.95
Pot Life:	3 Hours
Shelf Life:	1 year at room temperature

Minimum Bond Line Cure Schedule*:

80°C	1 Hour
65°C	2 Hours
23°C	24 Hours

*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 parts together. *Please see Applications Note available on our website.*

Product Description:

EPO-TEK® E415G is a two component, silver-filled epoxy, designed for making electrical connections in semiconductor packaging and PCB assembly.

EPO-TEK® E415G Advantages & Application Notes:

- User friendly mix ratio of 1:1 allows for specialty packaging like VAC-PAX, "bi-pax", or double-barrel syringe format. It can also be meter-mixed, or static mixed by commercial dispensing equipment. The even mix ratio lends itself to hand, in-situ mixing for application in the field instead of the lab.
- A low temperature cure allows use in low cost plastic substrates and housings.
- Suggested applications:
  - Semiconductor: making flip chip interconnects for RFID tags and smart cards.
  - Opto-electronic: bonding to ITO for LCD fabrication and assembly.
  - Rf and Microwave: hand brushing silver epoxy for ESD / EMI shielding applications.
  - PCB: bonding of SMDs and other electronic components; commonly used on flex circuitry.
- This product may be used for fast curing at room temperature with low electrical resistance.

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:** Silver	**Weight Loss:**
***Consistency:** Thixotropic Paste	**@ 200°C:** 0.00%
***Viscosity (@ 2.5 RPM/23°C):** 70,000 – 100,000 cPs	**@ 250°C:** 0.02%
Thixotropic Index: 3.91	**@ 300°C:** 0.40%
***Glass Transition Temp.(Tg):** ≥ 40°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 175°C
Below Tg: 31 x 10^{-6} in/in/°C	**Intermittent:** - 55°C to 250°C
Above Tg: 210 x 10^{-6} in/in/°C	**Storage Modulus @ 23°C:** 1,051,279 psi
Shore D Hardness: 62	**Ions:** Cl^-
Lap Shear Strength @ 23°C: 1,240 psi	Na^+
Die Shear Strength @ 23°C: ≥ 5 Kg / 1,700 psi	NH_4^+
Degradation Temp. (TGA): 389°C	K^+
	***Particle Size:** ≤ 45 Microns
Electrical Properties:	
***Volume Resistivity @ 23°C:** ≤ 0.0003 Ohm-cm	**Volume Resistivity @ 23°C (23°C/24 hour cure):** ≤ 0.006 Ohm-cm
Thermal Properties:	
Thermal Conductivity: 2.11 W/mK	

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