EPO-TEK® E4110-LV

Technical Data Sheet

For Reference Only

Electrically Conductive, Silver-Filled Epoxy
(formerly EP110-LV)

Date: Apr 2013
Rev: V

No. of Components: Two
Mix Ratio by Weight: 10:1
Specific Gravity: Part A: 3.10 Part B: 0.96
Pot Life: 6 Hours
Shelf Life: One year at room temperature

Recommended Cure: 150°C **/** 1 Hour

Minimum Alternative Cure(s):	
may not achieve performance properties below	
150°C	15 Minutes
80°C	3 Hours
23°C	3 Days

NOTE: Container(s) should be kept closed when not in use. Filled systems should be stirred thoroughly before mixing and prior to use.

Product Description: EPO-TEK® E4110-LV is a two component, silver-filled epoxy used in electronic and circuit assembly applications in semiconductor and optical industries. A low viscosity version of EPO-TEK® E4110.

Typical Properties:

To be used as a guide only, not as a specification. Different batches, conditions & applications yield differing results.
Cure condition: 150°C / 1 Hour * denotes test on lot acceptance basis Data below is not guaranteed.

PHYSCIAL PROPERTIES:

*	**Color (before cure):**	Part A: Silver Part B: Clear /Colorless	
*	**Consistency**	Smooth flowing paste	
*	**Viscosity (23°C): @ 100 rpm**	350-850	**cPs**
	Thixotropic Index:	1.9	
*	**Glass Transition Temp:**	≥ 40	**°C** (Dynamic Cure:20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min)
	Coefficient of Thermal Expansion (CTE):		
	Below Tg:	50 x 10^{-6}	**in/in°C**
	Above Tg:	283 x 10^{-6}	**in/in°C**
	Shore D Hardness:	60	
	Lap Shear @ 23°C:	1,080	
	Die Shear @ 23°C:	≥ 5 **Kg**	1,700 **psi**
	Degradation Temp:	365	**°C**
	Weight Loss: **@ 200°C**	0.33	**%**
	@ 250°C	0.65	**%**
	@ 300°C	1.19	**%**
	OperatingTemp: : Continuous:	- 55**°C to** 150**°C**	
	Intermittent:	- 55**°C to** 250**°C**	
	Storage Modulus:	788,340	**psi**
	Ion Content: **Cl:**	332 **ppm**	**NA^+:** 0 **ppm**
	NH_4^+:	27 **ppm**	**K^+:** 0 **ppm**
*	**Particle Size:**	≤ 45	**microns**

ELECTRICAL AND THERMAL PROPERTIES:

	Thermal Conductivity:	1.78	**W/mK**
*	**Volume Resistivity @ 23°C:**	≤ 0.0005	**Ohm-cm**
	Volume Resistivity @ 23°C (25°C/40-60%RH/3Day cure):	≤ 0.007	**Ohm-cm**

Epoxies and Adhesives for Demanding Applications™

EPOXY TECHNOLOGY, INC.
14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805 FAX (978) 663-9782
www.epotek.com

EPO-TEK® E4110-LV Advantages & Suggested Application Notes:

- Very low viscosity, silver-filled epoxy which can be applied by hand, brushing, roll coating, tooth-picking or stamping, or spraying.

- After cure, it has a shiny, almost metallic looking finish. This can be used to repair surface imperfections in metal coating applications such as electroplating or sputtering processes.

- Suggested applications:

◊ Electronics - filling vias at the PCB level for top-to-bottom connections; EMI & Rf shielding applications.

◊ Hybrids - electrically conductive potting for radar systems. The potting can be self-leveling, trapping no voids, and non-cracking with performance.

◊ Optics - die-attaching LED's by the stamping process, or pin-transferring applications.

- Passes NASA low outgassing standard ASTM E595 with proper cure - http://outgassing.nasa.gov/

EPOXY TECHNOLOGY, INC.
14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805 FAX (978) 663-9782
www.epotek.com