

Date: September 2017
Rev: IX
No. of Components: Two
Mix Ratio by Weight: 10 : 1
Specific Gravity: Part A: 3.10 Part B: 0.95
Pot Life: 4 Hours
Shelf Life- Bulk: One year at room temperature

Recommended Cure: 150°C / 1 Hour

Minimum Alternative Cure(s):
May not achieve performance properties listed below
 100°C / 1 Hour
 80°C / 3 Hours
 60°C / 6 Hours
 23°C / 3 Days

NOTES:

- Container(s) should be kept closed when not in use.
- Filled systems should be stirred thoroughly before mixing and prior to use.
- Performance properties (rheology, conductivity, others) of the product may vary from those stated on the data sheet when bi-pak/syringe packaging or post-processing of any kind is performed. Epoxy's warranties shall not apply to any products that have been reprocessed or repackaged from Epoxy's delivered status/container into any other containers of any kind, including but not limited to syringes, bi-paks, cartridges, pouches, tubes, capsules, films or other packages.
- Syringe packaging will impact initial viscosity and effective pot life, potentially beyond stated parameters.

Product Description: EPO-TEK® E4110 is an electrically conductive, silver-filled epoxy paste. This two component system is designed for low temperature curing from ambient to 80°C, although other heat cures can be used.

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

PHYSICAL PROPERTIES:			
* Color (before cure):	Part A: Silver	Part B: Clear	
* Consistency:	Smooth flowing paste		
* Viscosity (23°C) @ 100 rpm:	800 - 1,600	cPs	
Thixotropic Index:	2.1		
* 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:	48 x 10 ⁻⁶ in/in°C	
	Above Tg:	150 x 10 ⁻⁶ in/in°C	
Shore D Hardness:	60		
Lap Shear @ 23°C:	1,266	psi	
Die Shear @ 23°C:	≥ 5	Kg	1,778 psi
Degradation Temp:	380 °C		
Weight Loss:			
	@ 200°C:	0.70	%
Suggested Operating Temperature:	< 250 °C (Intermittent)		
Storage Modulus:	518,756 psi		
Ion Content:	Cl ⁻ :	151 ppm	Na ⁺ : 23 ppm
	NH ₄ ⁺ :	23 ppm	K ⁺ : 31 ppm
* Particle Size:	≤ 45 microns		

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	1.4	W/mK
* Volume Resistivity @ 23°C (150°C/1 Hour):	≤ 0.0005	Ohm-cm
* Volume Resistivity @ 23°C (25°C 40-60%RH/3 Day Cure):	≤ 0.009	Ohm-cm

Epoxyes and Adhesives for Demanding Applications™

This information is based on data and tests believed to be accurate. Epoxy Technology, Inc. makes no warranties (expressed or implied) as to its accuracy and assumes no liability in connection with any use of this product.

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EPO-TEK® E4110 Advantages & Suggested Application Notes:

- Ease of use: smooth flowing paste allows for automated dispensing, stamping, brushing, or hand applications. In some cases, the low viscosity nature of the paste allows it to be sprayed onto targets.
- Suggested applications include: EMI and Rf shielding, ITO interconnects in LCDs, low temperature cryogenic cooling.
- Exhibits superior adhesion to a wide variety of substrates including most metals, ceramics, glass and plastics.
- Hybrid / Micro-electronic adhesive including die-attach and substrate attach for Rf and Microwave devices.
- Bright and shiny silver epoxy; provides a metallic-like layer after cure.

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