EPO-TEK® E4110

Technical Data Sheet
For Reference Only
Electrically Conductive, Silver Epoxy

Date:	February 2021	
Rev:	X	
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

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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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