

# EPO-TEK® E4110

Epoxy; Epoxide  
Epoxy Technology Inc.

Message:

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.  
Formerly EP110

General Information		
Filler / Reinforcement	Silver	
Features	Electrically Conductive	
	Electromagnetic Shielding (EMI)	
	Good Adhesion	
	Low Viscosity	
	Radio Frequency Shielding (RFI)	
Uses	Adhesives	
	Electrical/Electronic Applications	
	LCD Applications	
Agency Ratings	EC 1907/2006 (REACH)	
	EU 2003/11/EC	
	EU 2006/122/EC	
RoHS Compliance	RoHS Compliant	
Forms	Paste	
Physical	Nominal Value	Unit
Ion Type		
Cl-	151	ppm
K+	31	ppm
Na+	23	ppm
NH4+	23	ppm
Particle Size	< 45.0	µm
Degradation Temperature	380	°C
Die Shear Strength - >5 kg (23°C)	11.7	MPa
Operating Temperature		
Continuous	-55 to 150	°C
Intermittent	-55 to 250	°C
Storage Modulus (23°C)	3.58	GPa
Thixotropic Index	2.10	
Weight Loss on Heating (200°C)	0.70	%

Thermal	Nominal Value	Unit	
Glass Transition Temperature <sup>1</sup>	> 40.0	°C	
CLTE - Flow			
-- <sup>2</sup>	4.8E-5	cm/cm/°C	
-- <sup>3</sup>	1.5E-4	cm/cm/°C	
Thermal Conductivity	1.4	W/m/K	
Thermoset	Nominal Value	Unit	Test Method
Thermoset Components			
Part A	Mix Ratio by Weight: 10		
Part B	Mix Ratio by Weight: 1.0		
Shelf Life (23°C)	52	wk	
Uncured Properties	Nominal Value	Unit	Test Method
Color			
-- <sup>4</sup>	Clear/Transparent		
-- <sup>5</sup>	Silver		
Density			
Part B	0.948	g/cm <sup>3</sup>	
Part A	3.09	g/cm <sup>3</sup>	
Viscosity <sup>6</sup> (23°C)	0.80 to 1.6	Pa·s	
Curing Time (150°C)	1.0	hr	
Pot Life	240	min	
Cured Properties	Nominal Value	Unit	Test Method
Shore Hardness (Shore D)	60		
Lap Shear Strength (23°C)	8.73	MPa	
Volume Resistivity			
23°C	< 5.0E-4	ohms·cm	
23°C <sup>7</sup>	< 7.0E-3	ohms·cm	
NOTE			
1.	Dynamic Cure 20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min		
2.	Below Tg		
3.	Above Tg		
4.	Part B		
5.	Part A		
6.	100 rpm		
7.	25°C/40-60%RH/3 Day cure		

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