

EPO-TEK® 431

Epoxy; Epoxide

Epoxy Technology Inc.

Message:

A two component, copper-filled, electrically and thermally conductive epoxy for adhesive bonding in electronics. It may be used at the PCB level for inter-connecting, grounding and EMI RF shielding. Fast curing at relatively low temperatures may be realized. Higher viscosity version of EPO-TEK® 430.

General Information		
Filler / Reinforcement	Copper	
Features	Electrically Conductive	
	Electromagnetic Shielding (EMI)	
	Fast Cure	
	Thermally Conductive	
Uses	Adhesives	
	Bonding	
	Electrical/Electronic 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-	15	ppm
K+	3	ppm
Na+	25	ppm
NH4+	36	ppm
Particle Size	< 50.0	µm
Degradation Temperature	434	°C
Die Shear Strength - 3.5 kg (23°C)	8.20	MPa
Operating Temperature		
Continuous	-55 to 250	°C
Intermittent	-55 to 350	°C
Storage Modulus (23°C)	4.82	GPa
Weight Loss on Heating		
200°C	0.76	%
250°C	1.7	%

300°C	2.8	%
Thermal	Nominal Value	Unit
Glass Transition Temperature ¹	> 110	°C
CLTE - Flow ²	5.7E-5	cm/cm/°C
Thermal Conductivity	1.6	W/m/K
Thermoset	Nominal Value	Unit
Thermoset Components		
Part A	Mix Ratio by Weight: 100	
Part B	Mix Ratio by Weight: 2.0	
Shelf Life (23°C)	52	wk
Uncured Properties	Nominal Value	Unit
Color		
-- ³	Amber	
-- ⁴	Brown	
Density		
Part B	1.02	g/cm ³
Part A	3.78	g/cm ³
Viscosity ⁵ (23°C)	> 820	Pa·s
Curing Time (150°C)	1.0	hr
Pot Life	180	min
Cured Properties	Nominal Value	Unit
Shore Hardness (Shore D)	77	
Lap Shear Strength (23°C)	9.27	MPa
Volume Resistivity (23°C)	< 5.0E-3	ohms·cm
NOTE		
1.	Dynamic Cure 20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min	
2.	Below Tg	
3.	Part B	
4.	Part A	
5.	0.5 rpm	

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