

## Epoxy Technology EPO-TEK® 431 Copper Filled Epoxy

Category : Polymer , Thermoset , Epoxy , Epoxy , Electrically Conductive

### Material Notes:

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

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Epoxy-Technology-EPO-TEK-431-Copper-Filled-Epoxy.php](http://www.lookpolymers.com/polymer_Epoxy-Technology-EPO-TEK-431-Copper-Filled-Epoxy.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.02 g/cc	1.02 g/cc	Part B
	3.79 g/cc	3.79 g/cc	Part A
Particle Size	<= 50 µm	<= 50 µm	
Viscosity	>= 819200 cP	>= 819200 cP	0.5 rpm
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	77	77	
Tensile Modulus	2.75 GPa	400 ksi	Storage
Shear Strength	8.20 MPa	1190 psi	Die
	9.267 MPa	1344 psi	Lap

Thermal Properties	Metric	English	Comments
CTE, linear	57.0 µm/m-°C	31.7 µin/in-°F	Below Tg
Thermal Conductivity	1.55 W/m-K	10.8 BTU-in/hr-ft <sup>2</sup> -°F	
Maximum Service Temperature, Air	250 °C	482 °F	Continuous
	350 °C	662 °F	Intermittent
Minimum Service Temperature, Air	-55.0 °C	-67.0 °F	Continuous
	-55.0 °C	-67.0 °F	Intermittent
Glass Transition Temp, Tg	>= 110 °C	>= 230 °F	Dynamic Cure 20–200°C /ISO 25 Min; Ramp -10–200°C @ 20°C/Min
Decomposition Temperature	434 °C	813 °F	Degradation Temperature

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 0.0050 ohm-cm	>= 0.0050 ohm-cm	

Chemical Properties	Metric	English	Comments
Ionic Impurities - Na (Sodium)	25 ppm	25 ppm	
Ionic Impurities - K (Potassium)	3.0 ppm	3.0 ppm	
Ionic Impurities - Cl (Chloride)	15 ppm	15 ppm	

Processing Properties	Metric	English	Comments
Cure Time	30.0 min	0.500 hour	
	@Temperature 80.0 °C	@Temperature 176 °F	
	60.0 min	1.00 hour	
	@Temperature 60.0 °C	@Temperature 140 °F	
Pot Life	180 min	180 min	
Shelf Life	12.0 Month	12.0 Month	
	@Temperature 25.0 °C	@Temperature 77.0 °F	

Descriptive Properties	Value	Comments
Color	Amber	Part B
	Brown Copper	Part A
Consistency	Thick paste	
Ionic Impurities NH4	36 ppm	
Mix Ratio By Weight	100:2	
Number of Components	Two	
Weight Loss	0.76%	200°C
	1.65%	250°C
	2.8%	300°C

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