

Product Information Sheet

MATERIAL ID:

EPO-TEK® 431

Date: 10/2006

Per:

Rev: IV

Material Description:

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.

Number of Components:

Two

Mix Ratio by weight:

100:2

Cure Schedule (minimum)

80°C/30 Minutes - 60°C/1 Hour

Specific Gravity:

--- Part A: 3.79 Part B: 1.02

Pot Life:

3 Hours

Shelf Life:

One year at room temperature

NOTE: Container(s) should be kept closed when not in use. Filled systems should be stirred thoroughly before mixing and prior to use

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

PHYSICAL PROPERTIES:	
<p>*Color (before cure): Part A: Brown Copper Part B: Amber</p> <p>*Consistency: Thick paste</p> <p>*Viscosity (23°C): @ 0.5 rpm > 819,200 cPs</p> <p>Thixotropic Index: N/A</p> <p>*Glass Transition Temp: ≥ 110 °C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)</p> <p>Coefficient of Thermal Expansion (CTE): Below Tg: 57 x 10⁻⁶ in/in°C</p> <p>Shore D Hardness: 77</p> <p>Lap Shear @ 23°C: 1,344 psi</p> <p>Die Shear @ 23°C: 3.5 Kg / 1,190 psi</p> <p>Degradation Temp: 434 °C</p>	<p>Weight Loss:</p> <p>@ 200°C: 0.76 % @ 250°C: 1.65 % @ 300°C: 2.80 %</p> <p>Operating Temp:</p> <p>Continuous: - 55°C to + 250°C Intermittent: - 55°C to + 350°C</p> <p>Storage Modulus @ 23°C: 699,567 psi</p> <p>Ion Content:</p> <p>Cl⁻: 15 ppm NH₄⁺: 36 ppm Na⁺: 25 ppm K⁺: 3 ppm</p> <p>*Particle Size: ≤ 50 microns</p>

ELECTRICAL AND THERMAL PROPERTIES:	
<p>Thermal Conductivity: 1.55 W/mK</p> <p>*Volume Resistivity @ 23°C: ≤ 0.005 Ohm-cm</p>	<p>Dielectric Constant (1KHz): N/A</p> <p>Dissipation Factor (1KHz): N/A</p>

OPTICAL PROPERTIES @ 23°C:	
<p>Spectral Transmission: N/A</p>	<p>Index of Refraction: N/A</p>

EPOXY TECHNOLOGY, INC.
 14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805, FAX (978) 663-9782
 WEB SITE: www.epotek.com