

## Product Information Sheet

**MATERIAL ID:**

**EPO-TEK® 320NC**

**Date:** 10/2006

**Per:**

**Rev:** II

A two component, black-colored and optically opaque epoxy designed for optical, medical, and opto-electronic packaging of semiconductor devices and components. It is a modification of EPO-TEK® 320 for increased insulation and dielectric properties.

**Material Description:**

**Number of Components:**

Two

**Mix Ratio by weight:**

10:1

**Cure Schedule (minimum)**

70°C/1 Hour - 23°C/24 Hours

**Specific Gravity:**

--- Part A: 2.06 Part B: 0.88

**Pot Life:**

20 Minutes

**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: varies as required*  
 \* denotes test on lot acceptance basis

<b>PHYSICAL PROPERTIES:</b>			
<b>*Color (before cure):</b>	Part A: Black Part B: Clear/Colorless	<b>Die Shear @ 23°C:</b>	≥ 15 Kg / 5,100 psi
<b>*Consistency:</b>	Smooth pourable paste	<b>Degradation Temp:</b>	340 °C
<b>*Viscosity (23°C):</b>		<b>Weight Loss:</b>	
@ 100 rpm	1,000 - 3,000 cPs	@ 200°C:	0.39 %
<b>Thixotropic Index:</b>	N/A	@ 250°C:	0.63 %
<b>*Glass Transition Temp:</b>	≥ 50 °C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)	@ 300°C:	1.31 %
<b>Coefficient of Thermal Expansion (CTE):</b>		<b>Operating Temp:</b>	
Below Tg:	28 x 10 <sup>-6</sup> in/in°C	Continuous:	- 55°C to + 175°C
Above Tg:	94 x 10 <sup>-6</sup> in/in°C	Intermittent:	- 55°C to + 275°C
<b>Shore D Hardness:</b>	85	<b>Storage Modulus @ 23°C:</b>	538,124 psi
<b>Lap Shear @ 23°C:</b>	> 2,000 psi	<b>*Particle Size:</b>	≤ 20 microns

  

<b>ELECTRICAL AND THERMAL PROPERTIES:</b>			
<b>Thermal Conductivity:</b>	N/A W/mK	<b>Dielectric Constant (1KHz):</b>	9.92
<b>Volume Resistivity @ 23°C:</b>	≥ 2 x 10 <sup>11</sup> Ohm-cm	<b>Dissipation Factor (1KHz):</b>	0.067

  

<b>OPTICAL PROPERTIES @ 23°C:</b>			
<b>Spectral Transmission:</b>	< 1 % @ 300-2500 nm	<b>Index of Refraction:</b>	N/A

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