

## Product Information Sheet

**MATERIAL ID:**
**EPO-TEK® 301-1**
**Date:** 10/2006

**Per:**
**Rev:** II

**Material Description:**

A two component, room temperature curing, optical grade epoxy, designed for optics, medical, and opto-electronic packaging of semiconductor devices, components, and electronics. It is a lower viscosity version of EPO-TEK® 301.

**Number of Components:**

Two

**Mix Ratio by weight:**

20:5

**Cure Schedule (minimum)**

65°C/1 Hour - 23°C/24 Hours

**Specific Gravity:**

--- Part A: 1.14 Part B: 0.87

**Pot Life:**

1 - 2 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 - **TOTAL MASS SHOULD NOT EXCEED 25 GRAMS** -

**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: 65°C/2 hours*  
 \* denotes test on lot acceptance basis

<b>PHYSICAL PROPERTIES:</b>			
<b>*Color (before cure):</b>	Part A: Clear/Colorless	Part B: Clear/Colorless	
<b>*Consistency:</b>	Pourable liquid	<b>Die Shear @ 23°C:</b>	≥ 5 Kg / 1,700 psi
<b>*Viscosity (23°C):</b>		<b>Degradation Temp:</b>	390 °C
@ 100 rpm	80 - 100 cPs	<b>Weight Loss:</b>	
<b>Thixotropic Index:</b>	N/A	@ 200°C:	0.44 %
<b>*Glass Transition Temp:</b>	≥ 65 °C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)	@ 250°C:	0.84 %
<b>Coefficient of Thermal Expansion (CTE):</b>		@ 300°C:	1.59 %
Below Tg:	54 x 10 <sup>-6</sup> in/in°C	<b>Operating Temp:</b>	
Above Tg:	175 x 10 <sup>-6</sup> in/in°C	<b>Continuous:</b>	- 55°C to + 200°C
<b>Shore D Hardness:</b>	80	<b>Intermittent:</b>	- 55°C to + 300°C
<b>Lap Shear @ 23°C:</b>	1,100 psi	<b>Storage Modulus @ 23°C:</b>	224,700 psi
		<b>*Particle Size:</b>	N/A

<b>ELECTRICAL AND THERMAL PROPERTIES:</b>			
<b>Thermal Conductivity:</b>	N/A	<b>Dielectric Constant (1KHz):</b>	4.26
<b>Volume Resistivity @ 23°C:</b>	≥ 3 x 10 <sup>13</sup> Ohm-cm	<b>Dissipation Factor (1KHz):</b>	0.021

<b>OPTICAL PROPERTIES @ 23°C:</b>			
<b>Spectral Transmission:</b>	>96 % @ 400-1600 nm >92 % @ 1600-2000 nm	<b>Refractive Index (Uncured):</b>	1.5168 @ 589 nm

**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)