

**Product Information Sheet**

**MATERIAL ID:**

**EPO-TEK® EK1000-MP**

**Date:** Aug 2011

**Rev:** I

**Material Description:**

A single component, silver-filled adhesive that exhibits exceptional thermal and electrical conductivity along with a shiny silver appearance making it ideal for the demanding requirements of high power LED die attach applications. Designed specifically to meet the requirements pertaining to the MIL-STD883/Test Method 5011 for military hybrids. Other benefits include low viscosity and high thixotropy making it suitable for a wide range of application techniques.

**Number of Components:** Single

**Mix Ratio by Weight:** N/A

**Cure Schedule (minimum):** 200°C/1 Hour

**Specific Gravity:** 3.34

**Pot Life:** 2 Weeks

**Dry Time:** < 1 Day

**Shelf Life:** One year at -40°C

*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

**PHYSICAL PROPERTIES:**

* <b>Pot Life - MIL-STD 883/5011:</b>	Pass (< 10% change after 1 hour)		
* <b>Color (before cure):</b>	Silver		
* <b>Consistency</b>	Smooth paste		
* <b>Viscosity (23°C): @ 100 rpm</b>	1,800 - 3,600 cPs		
<b>Thixotropic Index:</b>	3.6		
* <b>Glass Transition Temp:</b>	> 80 °C (Dynamic Cure: 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)		
<b>Coefficient of Thermal Expansion (CTE):</b>			
<b>Below Tg:</b>	38 x 10 <sup>-6</sup> in/in°C		
<b>Above Tg:</b>	94 x 10 <sup>-6</sup> in/in°C		
<b>Shore D Hardness:</b>	66		
<b>Lap Shear @ 23°C:</b>	1,010 psi		
* <b>Die Shear @ 23°C - initial</b>	>10 Kg	3,400 psi	
<b>Die Shear @ 23°C</b>	> 5 Kg	1,700 psi	
after 1000 hrs 85C/85%RH			
<b>Degradation Temp:</b>	357 °C		
<b>Weight Loss:</b>			
* @ 200°C	0.19 %		
@ 250°C	0.94 %		
@ 300°C	1.70 %		
<b>Operating Temp:</b>			
<b>Continuous:</b>	- 55°C to	200 °C	
<b>Intermittent:</b>	- 55°C to	300 °C	
<b>Storage Modulus:</b>	273,528 psi		
* <b>Ion Content:</b>			
<b>Cl:</b>	< 200 ppm	<b>NA<sup>+</sup>:</b>	< 50 ppm
<b>NH<sub>4</sub><sup>+</sup>:</b>	5 ppm	<b>K<sup>+</sup>:</b>	< 50 ppm
* <b>Particle Size:</b>	< 45 microns		

**ELECTRICAL AND THERMAL PROPERTIES:**

<b>Thermal Conductivity (150°C/1 Hr)</b>	12.6 W/mK
<b>Thermal Conductivity (150°C/1 Hour + 200°C/1 Hour):</b>	26.3
* <b>Volume Resistivity:</b>	<0.00009 Ohm-cm

**This information is based on data and tests believed to be accurate. Epoxy Technology, Inc. makes no warranties (expressed or implied) as to its accuracy and assumes no liability in connection with any use of this product.**

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