

**Date:** November 2019  
**Rev:** VIII  
**No. of Components:** Two  
**Mix Ratio by Weight:** 1 : 1  
**Specific Gravity:** Part A: 3.82 Part B: 3.88  
**Pot Life:** 2 Weeks **Dry Time:** < 1 Day  
**Shelf Life- Bulk:** One year refrigerated upon arrival

**Recommended Cure: 150°C/1 Hour + 200°C/1 Hour (post-cure)**

Minimum Alternative Cure(s):  
*May not achieve performance properties listed below*  
 200°C / 30 Minutes

**NOTES:**

- Container(s) should be kept closed when not in use.
- Filled systems should be stirred thoroughly before mixing and prior to use.
- Performance properties (rheology, conductivity, others) of the product may vary from those stated on the data sheet when bi-pak/syringe packaging or post-processing of any kind is performed. Epoxy's warranties shall not apply to any products that have been reprocessed or repackaged from Epoxy's delivered status/container into any other containers of any kind, including but not limited to syringes, bi-paks, cartridges, pouches, tubes, capsules, films or other packages.
- Thermal post-cure beneficial – contact [techserv@epotek.com](mailto:techserv@epotek.com) for recommendations.

**Product Description:** EPO-TEK® EK2000 is a two 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. Other benefits include low viscosity and high thixotropy making it suitable for a wide range of application techniques. It is a two component version of EPO-TEK® EK1000.

**Typical Properties:** Cure condition: Varies as required Different batches, conditions & applications yield differing results.  
 Data below is not guaranteed. To be used as a guide only, not as a specification. \* denotes test on lot acceptance basis

PHYSICAL PROPERTIES:			
* Color (before cure):	Part A: Silver	Part B: Silver	
* Consistency:	Smooth thixotropic paste		
* Viscosity (23°C) @ 100 rpm:	1,800 - 3,600	cPs	
Thixotropic Index:	3.6		
* Glass Transition Temp:	≥ 80	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
Below Tg:	38	x 10 <sup>-6</sup> in/in°C	
Above Tg:	94	x 10 <sup>-6</sup> in/in°C	
Shore D Hardness:	66		
Lap Shear @ 23°C:	1,010	psi	
Die Shear @ 23°C:	≥ 10	Kg	3,556 psi
Degradation Temp:	357	°C	
Weight Loss:			
@ 200°C:	0.19	%	
@ 250°C:	0.94	%	
@ 300°C:	1.70	%	
Suggested Operating Temperature:	< 300	°C (Intermittent)	
Storage Modulus:	273,528	psi	
Ion Content:	Cl:	< 10 ppm	Na+: 2 ppm
	NH <sub>4</sub> <sup>+</sup> :	6 ppm	K+: 0 ppm
* Particle Size:	≤ 45 microns		

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity (150°C / 1 Hour):	12.6	W/mK
Thermal Conductivity (150°C / 1 Hour + 200°C / 1 Hour):	26.3	W/mK
Thermal Conductivity (125°C / 2 Hours + 150°C / 36 Minutes + 200°C / 15 Minutes):	35.5	W/mK
* Volume Resistivity @ 23°C:	≤ 0.00009	Ohm-cm

**Epoxyes and Adhesives for Demanding Applications™**

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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**EPO-TEK® EK2000 Advantages & Suggested Application Notes:**

- Low viscosity and high thixotropy make it ideal for dispensing
- Two components for convenient shipping but also available as a single component version (EPO-TEK® EK1000) and Mil-STD 883 Test Method 5011 version (EPO-TEK® EK1000-MP)
- Extreme thermal management in high brightness LEDs and high power communication die attach such as MMICS and GaN
- Concentrated photo voltaic solar cells (CPV)
  - Die attach in triple junction III-V semiconductor chips, offering extremely low thermal resistance
  - Favorable performance when compared to solder
  - Replacing vacuum preform solder manufacturing with lower temp/low stress high volume dispensing process
- Alternative step cures can result in improved thermal management

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