

**Date:** September 2017  
**Rev:** V  
**No. of Components:** Single  
**Mix Ratio by Weight:** N/A  
**Specific Gravity:** 3.27  
**Pot Life:** 25 Days  
**Shelf Life- Bulk:** One year at -40°C

**Recommended Cure:**  
**B-stage 70°C / 10 Minutes; Cure 180°C / 1 Hour**

**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.

**Product Description:** EPO-TEK® EE149-6 is a single component, silver-filled, electrically conductive B-stage adhesive designed for semiconductor flip chips and hybrid microelectronics.

**Typical Properties:** Cure condition: B-stage 70°C / 10 Minutes; Cure 180°C / 1 Hour 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):	Silver		
* Consistency:	Smooth paste		
* Viscosity (23°C) @ 100 rpm:	2,000 - 4,000	cPs	
Thixotropic Index:	4.7		
* Glass Transition Temp:	≥ 130	°C	(Dynamic Cure: 20-300°C/ISO 25 Min; Ramp -10-300°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):			
Below Tg:	34	x 10 <sup>-6</sup> in/in°C	
Above Tg:	113	x 10 <sup>-6</sup> in/in°C	
Shore D Hardness:	74		
Lap Shear @ 23°C:	548	psi	
Die Shear @ 23°C:	≥ 15	Kg	5,334 psi
Degradation Temp:	380	°C	
Weight Loss:			
@ 250°C:	0.05	%	
@ 300°C:	0.16	%	
Suggested Operating Temperature:	< 300	°C	(Intermittent)
Storage Modulus:	546,505	psi	
Ion Content:	Cl:	4 ppm	Na <sup>+</sup> : 8 ppm
	NH <sub>4</sub> <sup>+</sup> :	10 ppm	K <sup>+</sup> : 5 ppm
* Particle Size:	≤ 20	microns	

**ELECTRICAL AND THERMAL PROPERTIES:**

Thermal Conductivity:	1.0	W/mK
* Volume Resistivity @ 23°C:	≤ 0.0005	Ohm-cm
Dielectric Constant (1KHz):	N/A	
Dissipation Factor (1KHz):	N/A	

**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.**

**EPOXY TECHNOLOGY, INC.**

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**EPO-TEK® EE149-6 Advantages & Suggested Application Notes:**

- Screen printable for flip chip bump arrays in semiconductor packaging.
- Rheology for high volume dispensing.
- B-stage enables easy handling and processing to prevent manufacturing bottlenecks.
- Perfect as a pre-applied die attach adhesive.
- Commonly used as a conductive lid seal epoxy.

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