EPO-TEK® 930-4
Technical Data Sheet
For Reference Only
Thermally Conductive Epoxy

	Two	Frozen Syringe	Minimum Bond Line Cure Schedule*:	
Number of Components:	Two	Frozen Syringe		
Mix Ratio By Weight:	100:3.3		150°C	10 Minutes
Specific Gravity:		1.36	100°C	4 Hours
Part A	1.31		80°C	6 Hours
Part B	1.02			
Pot Life:	1 Day	6 Hours		
Shelf Life:	One year at 23°C	Six months at -40°C		

*Note: Container(s) should be kept closed when not in use. For filled systems, mix contents of each container (A & B) thoroughly before mixing the two together. *Please see Applications Note available on our website.*

Product Description:

EPO-TEK® 930-4 is a two component, thermally conductive epoxy, formulated with a very fine boron-nitride filler particle. Also available in a single component frozen syringe.

EPO-TEK® 930-4 Advantages & Application Notes:

- Recommended for applications where heat dissipation and insulating properties are essential; attaching heat sinks on PCB; heat-sinking in hybrids such as DIP or TO-cans; kovar, aluminum or ceramic packaging.
- Semiconductor applications: die-attach inside plastic IC packages using JEDEC format; die bonding power devices; thermally conductive underfill and glob top for flip-chip assembled die.
- Adhesion to ferrous and non-ferrous metals, ceramic, glass, semiconductor materials and most plastics is excellent.
- Designed for many production methods such as screen printing techniques, automated dispensing, pin transfer or manual applications by hand or spatula.
- Ease of use: long pot-life with low temperature cure of 80°C possible.
- Color change characteristic that indicates the epoxy has reached optimum cure - it goes from an off-white color to an amber color - depending on cure cycle and epoxy thickness.

Typical Properties: *(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: 150°C/1 hour; * denotes test on lot acceptance basis)*

Physical Properties:	
***Color:** Part A:** Ivory **Part B:** Amber	**Die Shear Strength @ 23°C:** ≥ 15 Kg / 5,100 psi
***Consistency:** Smooth paste	**Degradation Temp. (TGA):** 425°C
***Viscosity (@ 20 RPM/23°C):** 12,000 – 17,000 cPs	**Weight Loss:**
Thixotropic Index: 2.4	**@ 200°C:** 0.10 %
***Glass Transition Temp.(Tg):** ≥ 90°C (Dynamic Cure 20 - 200°C /ISO 25 Min; Ramp -10 - 200°C @ 20°C/Min)	**@ 250°C:** 0.33 %
	@ 300°C: 0.73 %
Coefficient of Thermal Expansion (CTE):	**Operating Temp:**
Below Tg: 27 x 10^{-6} in/in/°C	**Continuous:** - 55°C to 200°C
Above Tg: 136 x 10^{-6} in/in/°C	**Intermittent:** - 55°C to 325°C
Shore D Hardness: 85	**Storage Modulus @ 23°C:** 607,651 psi
Lap Shear Strength @ 23°C: > 1,927 psi	***Particle Size:** ≤ 20 Microns
Thermal Properties:	
Thermal Conductivity: 1.67 W/mK	
Electrical Properties:	
Dielectric Constant @ 23°C (1 KHz): 3.73	**Volume Resistivity @ 23°C:** ≥ 2 x 10^{13} Ohm-cm
Dissipation Factor @ 23°C (1KHz): 0.004	

EPOXY TECHNOLOGY, INC.
14 Fortune Drive, Billerica, MA 01821-3972 **Phone**: 978.667.3805 **Fax**: 978.663.9782
www.EPOTEK.com

Epoxies 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.

Rev. V
08/2008