

Date: March 2021
Rev: IX
No. of Components: Two
Mix Ratio by Weight: 100 : 3.3
Specific Gravity: Part A: 1.31 Part B: 1.02
Pot Life: 1 Day
Shelf Life- Bulk: One year at room temperature
Shelf Life- Syringe: Six months at -40°C

Recommended Cure: 150°C / 1 Hour

Minimum Alternative Cure(s):
May not achieve performance properties listed below
 150°C / 10 Minutes
 100°C / 4 Hours
 80°C / 6 Hours

Syringe: 1.36
Syringe: 6 Hours

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® 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.

Typical Properties: Cure condition: 150°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):	Part A: Ivory	Part B: Amber	
* Consistency:	Smooth paste		
* Viscosity (23°C) @ 20 rpm:	12,000-17,000	cPs	
* Viscosity Syringe (23°C) @ 20 rpm:	9,000-18,000	cPs	
Thixotropic Index:	2.4		
* Glass Transition Temp:	≥ 90 °C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)		
Coefficient of Thermal Expansion (CTE):			
	Below Tg:	27	x 10 ⁻⁶ in/in°C
	Above Tg:	136	x 10 ⁻⁶ in/in°C
Shore D Hardness:	85		
Lap Shear @ 23°C:	1,927	psi	
Die Shear @ 23°C:	≥ 15	Kg	5,334 psi
Degradation Temp:	425 °C		
Weight Loss:			
	@ 200°C:	0.10	%
	@ 250°C:	0.33	%
	@ 300°C:	0.73	%
Suggested Operating Temperature:	< 325 °C (Intermittent)		
Storage Modulus:	607,651	psi	
* Particle Size:	≤ 20 microns		

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	1.7	W/mK
Volume Resistivity @ 23°C:	≥ 2 x 10 ¹³	Ohm-cm
Dielectric Constant (1KHz):	3.73	
Dissipation Factor (1KHz):	0.004	

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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www.epotek.com

EPO-TEK[®] 930-4 Advantages & Suggested 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.

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