

Date: November 2019
Rev: VIII
No. of Components: Two
Mix Ratio by Weight: 100 : 4
Specific Gravity: Part A: 2.01 Part B: 1.02
Pot Life: 2 Hours
Shelf Life- Bulk: One year at room temperature

Recommended Cure: 150°C / 1 Hour

Minimum Alternative Cure(s):
May not achieve performance properties listed below
 150°C / 5 Minutes
 100°C / 20 Minutes
 80°C / 2 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.
- Syringe packaging will impact initial viscosity and effective pot life, potentially beyond stated parameters.
- If product crystallizes in storage, place container in warm oven until crystallization disappears. Please refer to Tech Tip #7 on website.

Product Description: EPO-TEK® H72 is a two component, high Tg, thermally conductive and electrically insulating epoxy designed for semiconductor packaging including heat sinking, hermetic sealing, and opto-electronic assemblies.

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: Grey	Part B: Amber	
* Consistency:	Smooth paste		
* Viscosity (23°C) @ 10 rpm:	20,000-27,000	cPs	
Thixotropic Index:	1.2		
* Glass Transition Temp:	≥ 100	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
Below Tg:	29	x 10 ⁻⁶ in/in°C	
Above Tg:	138	x 10 ⁻⁶ in/in°C	
Shore D Hardness:	88		
Lap Shear @ 23°C:	> 2,000	psi	
Die Shear @ 23°C:	≥ 20	Kg	7,112 psi
Degradation Temp:	476 °C		
Weight Loss:			
@ 200°C:	0.18	%	
@ 250°C:	0.28	%	
@ 300°C:	0.43	%	
Suggested Operating Temperature:	< 350	°C (Intermittent)	
Storage Modulus:	759,931	psi	
* Particle Size:	≤ 50	microns	

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	0.6	W/mK
Volume Resistivity @ 23°C:	≥ 1 x 10 ¹³	Ohm-cm
Dielectric Constant (1KHz):	5.40	
Dissipation Factor (1KHz):	0.009	

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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www.epotek.com

EPO-TEK® H72 Advantages & Suggested Application Notes:

- Suggested Applications:
 - Semiconductor/PCB: heat sinking, adhesion to Al, Cu, Al₂O₃; extra mechanical protection for SMDs.
 - Hybrids: substrate attach of ceramic circuit to package. Underfill below SMDs; staking large tantalum caps to ceramic substrates, lid sealing.
 - Opto-electronics: sensor devices, sealing ferrule or fiber optic feed through, replacement of eutectic lid seal.
- Passes NASA low outgassing standard ASTM E595 with proper cure - <http://outgassing.nasa.gov/>.
- Paste-like rheology allows for application by syringe dispensing, screen printing, pin transfer or by hand.
- Built in color change - from grey to amber - when cured properly.
- Possible to be snap cured in less than 5 minutes, at relatively low temperature.
- Alumina filler allows a toughened epoxy formulation that is very robust and high temperature resistant
- Highly resistant to most chemicals and solvents.

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