

Date: May 2020
Rev: VIII
No. of Components: Single
Mix Ratio by Weight: N/A
Specific Gravity: 1.68
Pot Life: 28 Days
Shelf Life: One year at -40°C

Recommended 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.
- Complies with the requirements of MIL-STD 883/Method 5011.

Product Description: EPO-TEK® H65-175MP is a single component, alumina-filled epoxy for hybrid die and component attach. It can also be used for semiconductor and high temperature ceramic and vacuum packaging.

Typical Properties: Cure condition: 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):	White		
* Consistency:	Smooth paste		
* Viscosity (23°C) @ 2.5 rpm:	80,000-120,000	cPs	
Thixotropic Index:	1.9		
* Glass Transition Temp:	≥ 100	°C	(Dynamic Cure: 20-300°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):			
	Below Tg:	38	x 10 ⁻⁶ in/in°C
	Above Tg:	136	x 10 ⁻⁶ in/in°C
Shore D Hardness:	95		
* Lap Shear @ 23°C:	> 2,000	psi	
Die Shear @ 23°C:	≥ 20	Kg	7,112 psi
Degradation Temp:	397	°C	
Weight Loss:			
	* @ 200°C:	0.10	%
	@ 250°C:	0.16	%
	@ 300°C:	0.30	%
Suggested Operating Temperature:	< 300	°C	(Intermittent)
Storage Modulus:	816,394	psi	
* Ion Content:	Cl ⁻ : < 200 ppm	Na ⁺ : < 50 ppm	
	NH ₄ ⁺ : 38 ppm	K ⁺ : < 50 ppm	
* Particle Size:	≤ 20	microns	

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	0.8	W/mK
Volume Resistivity @ 23°C:	≥ 1.2 x 10 ¹⁴	Ohm-cm
Dielectric Constant (1KHz):	5.30	
Dissipation Factor (1KHz):	0.011	

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® H65-175MP Advantages & Suggested Application Notes:

- Viscosity is suitable for automatic syringe dispensers, although it can be applied by screen printing or manual hand operations.
- Performs exceptionally well as a die-attach for small chips such as GaAs, LEDs and diodes, as well as SMDs.
- Capable of resisting 260°C green reflow process, low outgassing in hermetic lid-seal processes near 300°C, and organic burn-in up to 150°C/1000 hours storage.
- Certified to MIL-STD 883/Test Method 5011 –yields low levels of water extractable monovalent ions such as Chlorides.
- Capable of JEDEC Level II die-attach packaging on die-paddles and lead-frames.
- Widely used epoxy; popular choice for non-silver-filled die-attach epoxies; opto-packaging, hybrids, and many types of substrates including kovar, ceramic, and BT.
- Available in many different viscosity ranges – contact Technical Services at techserv@epotek.com for best recommendation.
- Can be used as non-conductive staking epoxy, in conjunction with EPO-TEK® H35-175MP for attaching SMDs to the hybrid circuit.

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