EPO-TEK® H70E-2

Technical Data Sheet
For Reference Only
Thermally Conductive, Electrically Insulating Epoxy

Date:	July 2019		**Recommended Cure: 150°C / 1 Hour**
Rev:	VII		
No. of Components:	Two		Minimum Alternative Cure(s):
Mix Ratio by Weight:	1 : 1		*May not achieve performance properties listed below*
Specific Gravity:	Part A: 1.50	Part B: 2.30	175°C / 1 Minute
Pot Life:	2 Days		150°C / 5 Minutes
Shelf Life- Bulk:	One year at room temperature		120°C / 15 Minutes
Shelf Life- Syringe:	Six months at -40°C		80°C / 90 Minutes

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® H70E-2 is a two component, thermally conductive electrically insulating epoxy designed for glob-top chip protection in TAB and COB die-attach technologies. It is used to prevent chips from being mechanically damaged during micro-package assembly and handling.

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: Black Part B: Cream	
* Consistency:	Smooth thixotropic paste	
* Viscosity (23°C) @ 20 rpm:	9,000 - 15,000	cPs
Thixotropic Index:	1.7	
* Glass Transition Temp:	≥ 80	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):		
Below Tg:	20	x 10^{-6} in/in°C
Above Tg:	112	x 10^{-6} in/in°C
Shore D Hardness:	65	
Lap Shear @ 23°C:	> 2,000	psi
Die Shear @ 23°C:	≥ 5	Kg 1,778 psi
Degradation Temp:	447	°C
Weight Loss:		
@ 200°C:	0.10	%
@ 250°C:	0.30	%
@ 300°C:	0.70	%
Suggested Operating Temperature:	< 300	°C (Intermittent)
Storage Modulus:	1,214,415	psi
Ion Content:	Cl^-: 267 ppm	
* Particle Size:	≤ 50	microns

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	1.0	W/mK
Volume Resistivity @ 23°C:	≥ 8 x 10^{12}	Ohm-cm
Dielectric Constant (1KHz):	5.19	
Dissipation Factor (1KHz):	0.007	

EPOXY TECHNOLOGY, INC.
14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805, FAX (978) 663-9782
www.epotek.com

EPO-TEK® H70E-2

Technical Data Sheet
For Reference Only
Thermally Conductive, Electrically Insulating Epoxy

EPO-TEK® H70E-2 Advantages & Suggested Application Notes:

- The epoxy exhibits resistance against moisture, contamination and solvents which make it an ideal glob top. See Technical Paper #24 in our library for process flow in TAB packaging and reliability study – http://www.epotek.com/technical-papers.asp.
- A slightly thixotropic paste with excellent handling characteristics, pot life and short curing cycles. The rheology provides a dot-shape or dome configuration over wire-bonded die. Capable of glob-top DAM-and-FILL, or single-dot glob-top.
- Suitable for mass production as semiconductor encapsulant; low temp cure 80°C capable, controlled viscosity. Capable of many packages including TAB, COB, CSPs, BGAs, DIP and TO-cans.
- Excellent adhesion to PCB, ferrous and non-ferrous metals, glass, ceramic, epoxy package shells and semiconductor materials.
- Recommended for chip bonding, circuit repair, reinforce lead-frames, LSI chip packaging and good heat dissipation.

EPOXY TECHNOLOGY, INC.
14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805, FAX (978) 663-9782
www.epotek.com