EPO-TEK® H70S

Technical Data Sheet
For Reference Only
Thermally Conductive Epoxy for Die Stamping

Date:	February 2021	
Rev:	X	
No. of Components:	Two	
Mix Ratio by Weight:	1 : 1	
Specific Gravity:	Part A: 1.25	Part B: 2.03
Pot Life:	3 Days	
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
175°C / 1 Minute
150°C / 5 Minutes
120°C / 15 Minutes
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® H70S is a modified version of EPO TEK® H70E, designed primarily for die stamping. It is a highly reliable, alumina- filled epoxy with a smooth, flowable consistency, designed for chip bonding in micro-electronic and opto-electronic applications.

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: Cream	Part B: Grey
* Consistency:	Pourable paste	
* Viscosity (23°C) @ 100 rpm:	1,300 - 1,800	cPs
Thixotropic Index:	1.4	
* Glass Transition Temp:	≥ 50	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):		
Below Tg:	40	x 10^{-6} in/in°C
Above Tg:	190	x 10^{-6} in/in°C
Shore D Hardness:	83	
Lap Shear @ 23°C:	> 2,000	psi
Die Shear @ 23°C:	≥ 10	Kg 3,556 psi
Degradation Temp:	400	°C
Weight Loss:		
@ 250°C:	2.25	%
Suggested Operating Temperature:	< 300	°C (Intermittent)
Storage Modulus:	350,092	psi
Ion Content:	Cl^-: 231 ppm	Na^+: 95 ppm
		K^+: 39 ppm
* Particle Size:	≤ 20	microns

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	0.4	W/mK
Volume Resistivity @ 23°C:	≥ 7 x 10^{13}	Ohm-cm
Dielectric Constant (1KHz):	4.97	
Dissipation Factor (1KHz):	0.016	

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EPO-TEK® H70S Advantages & Suggested Application Notes:

- Heat-sinking adhesive. It is particularly recommended for thermal management applications where good heat dissipation is necessary.
- Easy to use. It can be screen printed, machine dispensed, stamped, or hand applied.
- Die attach adhesive designed to be used in the 300°C range to resist TC wire bonding operations. Meets JEDEC Level III and II packaging criteria.
- Excellent adhesion to ferrous and non-ferrous metals, lead-frame die paddle, glass, ceramic, kovar, and PCB.
- Can be cured very rapidly, it is an excellent material to use for making fast circuit repairs. Can be snap-cured for in-line semiconductor die-bonding.
- Suggested for potting applications due to easy flow and pouring – works well with thermistors into cavities.

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