EPO-TEK® H74

Technical Data Sheet
For Reference Only
Thermally Conductive Epoxy

Date:	February 2021	
Rev:	X	
No. of Components:	Two	
Mix Ratio by Weight:	100 : 3	
Specific Gravity:	Part A: 2.11	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

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 crystalizes in storage, place container in warm oven until crystallization disappears. Please refer to Tech Tip #7 on website.

Product Description: EPO-TEK® H74 is a two component, thermally conductive epoxy designed for hybrid circuit assembly including die attach, substrate attach, lid-seal, heat dissipation, and hermetic sealing in general.

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:	Thixotropic paste	
* Viscosity (23°C) @ 5 rpm:	45,000-65,000	cPs
Thixotropic Index:	2.1	
* 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:	21	x 10^{-6} in/in°C
Above Tg:	95	x 10^{-6} in/in°C
Shore D Hardness:	90	
Lap Shear @ 23°C:	1,656	psi
Die Shear @ 23°C:	≥ 15	Kg 5,334 psi
Degradation Temp:	425	°C
Weight Loss:		
@ 200°C:	0.29	%
@ 250°C:	0.50	%
@ 300°C:	0.80	%
Suggested Operating Temperature:	< 350	°C (Intermittent)
Storage Modulus:	860,430	psi
* Particle Size:	≤ 50	microns

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	1.3	W/mK
Volume Resistivity @ 23°C:	≥ 4 x 10^{12}	Ohm-cm
Dielectric Constant (1KHz):	4.95	
Dissipation Factor (1KHz):	0.007	

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EPO-TEK® H74 Advantages & Suggested Application Notes:

- Thixotropic paste allows for good handling characteristics - it can be dispensed, screen printed or manually applied by toothpick or spatula.
- Outstanding high temperature properties and excellent solvent, chemical and moisture resistance.
- Reasonable working life with fast curing at relatively low temperatures.
- Capable of providing near-hermetic seal.
- Passes NASA low outgassing standard ASTM E595 with proper cure - http://outgassing.nasa.gov/
- Built-in color indicator when the product is cured. This color change varies from a tan to brown, depending upon the curing conditions. It is normal for the epoxy to turn a very dark red when subjected to wire bonding temperatures.
- Used in opto-packaging for sealing 1) fiber into the snout; 2) a ferrule seal to the package; or 3) a boot to the package. Commonly used with DIP or Butterfly packages or TO-cans.

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