EPO-TEK® H81

Technical Data Sheet
For Reference Only
Gold-Filled, Electrically Conductive Epoxy

Date:	November 2019		**Recommended Cure: 150°C / 1 Hour**
Rev:	VII		
No. of Components:	Two		Minimum Alternative Cure(s):
Mix Ratio by Weight:	10 : 1		*May not achieve performance properties listed below*
Specific Gravity:	Part A: 5.80	Part B: 5.62	120°C / 15 Minutes
Pot Life:	2 Days		80°C / 90 Minutes
Shelf Life- Bulk:	One year at room temperature		50°C / 12 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.

Product Description: EPO-TEK® H81 is a two component, gold-filled, electrically and thermally conductive epoxy designed for hybrid micro-electronic and semiconductor packaging.

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: Dark brown		Part B: Dark brown		
* Consistency:	Thick paste				
* Viscosity (23°C) @ 0.5 rpm:	> 400,000	cPs			
Thixotropic Index:	N/A				
* 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:	Available for a fee				
Above Tg:	Available for a fee				
Shore D Hardness:	Available for a fee				
Lap Shear @ 23°C:	Available for a fee				
Die Shear @ 23°C:	≥ 5	Kg	1,778 psi		
Degradation Temp:	483	°C			
Weight Loss:					
@ 300°C:	< 0.10	%			
Suggested Operating Temperature:	< 375	°C (Intermittent)			
Storage Modulus:	Available for a fee				
Ion Content:	Cl^-:	Available for a fee	Na^+:	Available for a fee	
	NH_4^+:	Available for a fee	K^+:	Available for a fee	
* Particle Size:	≤ 50	microns			

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	Available for a fee	
* Volume Resistivity @ 23°C:	≤ 0.0009	Ohm-cm

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EPO-TEK® H81 Advantages & Suggested Application Notes:

- Gold filled epoxy allows for anti-oxidation of contacts and terminals in high reliability devices found in aerospace, military, and avionics industry.
    - It has also been used in medical circuits using traditional hybrid packaging technologies.
- High viscosity paste allows for precision deposition onto circuits by means of printing and delicate hand processes.
- Low temperature cure capabilities with an extended pot life.
- Suggested Applications:
    - Adhesive for joining die and SMDs onto the hybrid circuits.
    - Repairing defective Au thick-film conductor traces and contact pads.
    - Resisting oxidation and electro-migration in high-reliability micro-electronics.
    - Joining material as alternative to high temperature Au-Sn eutectic solders processes exceeding 300°C.
- Passes NASA low outgassing standard ASTM E595 with proper cure - http://outgassing.nasa.gov/

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