



# EPO-TEK® H24

Technical Data Sheet

For Reference Only

Electrically Conductive Epoxy

Date:	February 2022
Rev:	VIII
No. of Components:	Two
Mix Ratio by Weight:	100 : 5
Specific Gravity:	Part A: 2.10      Part B: 1.05
Pot Life:	18 Hours
Shelf Life- Bulk:	Six months at room temperature
Shelf Life- Syringe:	Six months at -40°C

## Recommended Cure: 150°C / 1 Hour

### Minimum Alternative Cure(s):

*May not achieve performance properties listed below*

150°C / 5 Minutes

120°C / 10 Minutes

100°C / 20 Minutes

80°C / 45 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® H24 is a two component, electrically and thermally conductive epoxy adhesive designed for semiconductor die attach and hybrid micro-electronics assembly.

**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: Silver	Part B: Amber	
* Consistency:	Smooth paste		
* Viscosity (23°C) @ 10 rpm:	15,000-23,000	cPs	
Thixotropic Index:	1.9		
* 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:	28	x 10 <sup>-6</sup> in/in°C	
Above Tg:	104	x 10 <sup>-6</sup> in/in°C	
Shore D Hardness:	76		
Lap Shear @ 23°C:	> 2,000	psi	
Die Shear @ 23°C:	≥ 5	Kg	1,778 psi
Degradation Temp:	470	°C	
Weight Loss:			
@ 200°C:	0.04	%	
@ 250°C:	0.04	%	
@ 300°C:	0.10	%	
Suggested Operating Temperature:	< 350	°C (Intermittent)	
Storage Modulus:	484,807	psi	
Ion Content:	Cl <sup>-</sup> : 60 ppm	Na <sup>+</sup> : 88 ppm	
	NH <sub>4</sub> <sup>+</sup> : 21 ppm	K <sup>+</sup> : 8 ppm	
* Particle Size:	≤ 45	microns	

ELECTRICAL AND THERMAL PROPERTIES:			
Thermal Conductivity:	0.7	W/mK	
* Volume Resistivity @ 23°C:	≤ 0.02	Ohm-cm	

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## EPO-TEK® H24 Advantages & Suggested Application Notes:

- Low density silver-filled epoxy is ideal for ultrasound and acoustical applications of electronics.
- Extended pot-life allows for mass production and low waste.
- Suggested Applications:
  - Hybrid Micro-electronics: SMD and die attach on Au pads and ceramic substrates. Single step curing method of die and SMDs.
  - Electronics: compatible with piezo technologies for ultrasound circuits found in medical, industrial, and petrochemical industries.
  - Scientific / Life Sciences: geo-thermal, geo-seismic, infra-sound, as well as acoustical-optical circuits for interferometers and lasers.
  - Optical: bright and shiny silver flake is advantageous for LED die-attach.
- A smooth and creamy paste allows for automated or hand dispensing, pin transfer, or screen printing application methods of manufacture.

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