

Date: May 2021
Rev: XV
No. of Components: Two
Mix Ratio by Weight: 100 : 4.5
Specific Gravity: Part A: 2.03 Part B: 1.03
Pot Life: 16 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

120°C / 10 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.

Product Description: EPO-TEK® H22 is a two component, silver-filled epoxy system designed specifically for die bonding and sealing hybrid circuit packages.

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 flowing paste	
* Viscosity (23°C) @ 10 rpm:	17,000-30,000	cPs
Thixotropic Index:	2.4	
* 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:	39	x 10 ⁻⁶ in/in°C
Above Tg:	224	x 10 ⁻⁶ in/in°C
Shore D Hardness:	80	
Lap Shear @ 23°C:	1,980	psi
Die Shear @ 23°C:	≥ 5	Kg 1,778 psi
Degradation Temp:	454	°C
Weight Loss:		
@ 200°C:	0.09	%
@ 250°C:	0.23	%
@ 300°C:	0.42	%
Suggested Operating Temperature:	< 350	°C (Intermittent)
Storage Modulus:	540,120	psi
Ion Content:	Cl ⁻ : 175 ppm	Na ⁺ : 60 ppm
	NH ₄ ⁺ : 148 ppm	K ⁺ : 6 ppm
* Particle Size:	≤ 45	microns

ELECTRICAL AND THERMAL PROPERTIES:

Thermal Conductivity:	0.9	W/mK
* Volume Resistivity @ 23°C:	≤ 0.005	Ohm-cm

Epoxyes and Adhesives for Demanding Applications™

This information is based on data and tests believed to be accurate. Epoxy Technology, Inc. makes no warranties (expressed or implied) as to its accuracy and assumes no liability in connection with any use of this product.

EPOXY TECHNOLOGY, INC.

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EPO-TEK® H22 Advantages & Suggested Application Notes:

- A smooth, free flowing, slightly thixotropic paste, using a 100% solids system. It can be dispensed, screen printed, or manually applied.
- High Tg allows it to be used for high temperature applications.
- Outstanding high temperature properties and excellent solvent, chemical and moisture resistance.
- Extended pot life and fast curing at relatively low temperatures < 100°C.
- Designed to be used in the 300°C range for applications such as wire bonding operations and eutectic lid-sealing processes.
- Contains no solvents or thinners. Passes NASA low outgassing standard ASTM E595 with proper cure - <http://outgassing.nasa.gov/>.
- Can be used instead of eutectic solders for near-hermetic sealing.

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