

EPO-TEK® H20S

Technical Data Sheet For Reference Only

Electrically Conductive, Silver Epoxy for Die Stamping

Date: May 2021 Rev: XV

No. of Components: Two Mix Ratio by Weight: 1:1

Specific Gravity: Part A: 1.74 Part B: 3.07

Pot Life: 3 Days

Shelf Life- Bulk: One year at room temperature

Shelf Life- Syringe: One year 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 / 15 Minutes 100°C / 45 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.

<u>Product Description:</u> EPO-TEK® H20S is a modified version of EPO-TEK® H20E, designed primarily for die stamping and dispensing techniques for chip bonding. EPO-TEK® H20S is a highly reliable, two component, silver-filled epoxy with a smooth, thixotropic consistency. In addition to the high electrical conductivity, the short curing cycles, the proven reliability, and the convenient mix ratio, EPO-TEK® H20S is extremely simple to use.

<u>Typical Properties:</u> 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 F	art B: Silver	
* Consistency:	Smooth thixotropic	Smooth thixotropic paste	
* Viscosity (23°C) @ 100 rpm:	1,800 - 2,800	cPs	
Thixotropic Index:	5.0		
* Glass Transition Temp:	≥ 80) °C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
Below Tg	: 3 ⁴	x 10 ⁻⁶ in/in°C	
Above Tg	: 120) x 10 ⁻⁶ in/in°C	
Shore D Hardness:	64	1	
Lap Shear @ 23°C:	1,240) psi	
Die Shear @ 23°C:	≥ 5	5 Kg 1,778 psi	
Degradation Temp:	414	↓ °C	
Weight Loss:			
@ 200°C	: 0.40) %	
@ 250°C	: 0.60) %	
@ 300°C	: 1.37	7 %	
Suggested Operating Temperature:	< 300) °C (Intermittent)	
Storage Modulus:	339,720) psi	
Ion Content:	Cl ⁻ : 162 ppm	n Na+: 0 ppm	
	NH ₄ +: 282 ppm	n K ⁺ : 4 ppm	
* Particle Size:	≤ 20) microns	

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	3.3	W/mK
* Volume Resistivity @ 23°C:	≤ 0.0005	Ohm-cm

Epoxies 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.

14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805, FAX (978) 663-9782



EPO-TEK® H20S

Technical Data Sheet For Reference Only

Electrically Conductive, Silver Epoxy for Die Stamping

EPO-TEK® H20S Advantages & Suggested Application Notes:

- Especially recommended for use in high speed epoxy chip bonding systems where fast cures are highly desirable.
- Suggested for JEDEC Level III and II plastic IC packaging.
- The low temperature cure makes it ideal for flex circuitry and other low stress applications.
- It is used extensively for bonding quartz crystal oscillators and other stress sensitive chips.
- Used for die and SMD bonding inside hybrid/hermetic packages such as DIP and TO-Cans; also EMI/Rf shielding of micro-electronics.
- Ideal for making ITO electrical contacts in LCD packaging; and suggested for LED dieattach.