

Date: September 2017
Rev: XI
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

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.

Product Description: 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.

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: Silver | |
| * Consistency: | 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: | 31 | x 10 ⁻⁶ in/in°C |
| | Above Tg: | 120 | x 10 ⁻⁶ in/in°C |
| Shore D Hardness: | 64 | | |
| Lap Shear @ 23°C: | 1,240 | psi | |
| Die Shear @ 23°C: | ≥ 5 | Kg | 1,778 psi |
| Degradation Temp: | 414 | °C | |
| Weight Loss: | | | |
| | @ 200°C: | 0.40 | % |
| | @ 250°C: | 0.60 | % |
| | @ 300°C: | 1.37 | % |
| Suggested Operating Temperature: | < 300 | °C | (Intermittent) |
| Storage Modulus: | 339,720 | psi | |
| Ion Content: | Cl ⁻ : | 162 ppm | Na ⁺ : 0 ppm |
| | NH ₄ ⁺ : | 282 ppm | 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 |

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.

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

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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 die-attach.

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