

Date: February 2022
Rev: XII
No. of Components: Two
Mix Ratio by Weight: 20 : 1
Specific Gravity: Part A: 1.55 Part B: 1.02
Pot Life: 1.5 Hours
Shelf Life- Bulk: One year 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 / 1 Minute

120°C / 5 Minutes

100°C / 10 Minutes

80°C / 30 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.
- Syringe packaging will impact initial viscosity and effective pot life, potentially beyond stated parameters.

Product Description: EPO-TEK® OE188 is a low CTE epoxy, designed for semiconductor and fiber optic applications.

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: Off white | Part B: Amber | | |
| * Consistency: | Smooth paste | | | |
| * Viscosity (23°C) @ 10 rpm: | 20,000-30,000 | cPs | | |
| Thixotropic Index: | 1.6 | | | |
| * Glass Transition Temp: | ≥ 90 | °C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min) | | |
| Coefficient of Thermal Expansion (CTE): | | | | |
| | Below Tg: | 19 | x 10 ⁻⁶ in/in°C | |
| | Above Tg: | 68 | x 10 ⁻⁶ in/in°C | |
| Shore D Hardness: | 91 | | | |
| Lap Shear @ 23°C: | 1,584 | psi | | |
| Die Shear @ 23°C: | ≥ 15 | Kg | 5,334 | psi |
| Degradation Temp: | 420 | °C | | |
| Weight Loss: | | | | |
| | @ 200°C: | 0.03 | % | |
| | @ 250°C: | 0.07 | % | |
| | @ 300°C: | 0.30 | % | |
| Suggested Operating Temperature: | < 335 | °C (Intermittent) | | |
| Storage Modulus: | 782,800 | psi | | |
| Ion Content: | Cl ⁻ : | 188 ppm | Na ⁺ : | 9 ppm |
| | NH ₄ ⁺ : | 304 ppm | K ⁺ : | ND |
| | | | | |
| * Particle Size: | ≤ 45 | microns | | |

| ELECTRICAL AND THERMAL PROPERTIES: | | | | |
|------------------------------------|------------------------|--------|--|--|
| Thermal Conductivity: | N/A | | | |
| Volume Resistivity @ 23°C: | ≥ 7 x 10 ¹² | Ohm-cm | | |
| Dielectric Constant (1KHz): | 3.56 | | | |
| Dissipation Factor (1KHz): | 0.003 | | | |

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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www.epotek.com

EPO-TEK® OE188 Advantages & Suggested Application Notes:

- Paste-like viscosity allows for application by dispensing, or hand methods such as toothpick, spatula or pin transfer.
- Color change upon cure – off-white to amber-brown - allows easy visual inspection.
- The CTE value below the Tg keeps potential stress to a minimum.
- Suggested applications:
 - Fiber Optic Packaging
 - Sealing fiber into the snout, ferrule, or feed-through of the opto-package.
 - Mounting optics, such as lenses, diodes, prisms, onto the substrate or “optical bench.”
 - Adhesive for building the optical bench to the correct Z-height .
 - “Toughened” adhesive to prevent fiber from the “piston effect” .
 - Semiconductor
 - As underfill of flip chip devices and SMDs like BGAs, capacitors and resistors.
 - Medical
 - As underfill of flip chip devices and SMDs like BGAs, capacitors and resistors.
- Capable of short cure cycles at low temperature, such as 80°C.

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