

Date: Apr 2013
Rev: VII
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: One year at room temperature

Recommended Cure: 150°C / 1 Hour

Minimum Alternative Cure(s):

may not achieve performance properties below

150°C / 1 Minute

120°C / 5 Minutes

100°C / 10 Minutes

80°C / 30 Minutes

NOTE: Container(s) should be kept closed when not in use. Filled systems should be stirred thoroughly before mixing and prior to use.

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

Typical Properties:

To be used as a guide only, not as a specification. Different batches, conditions & applications yield differing results.

*Cure condition: 150°C / 1 Hour * denotes test on lot acceptance basis Data below is not guaranteed.*

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:	1.61	
* 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	
Die Shear @ 23°C:	≥ 15 Kg	5,100 psi
Degradation Temp:	420 °C	
Weight Loss:		
@ 200°C	0.03 %	
@ 250°C	0.07 %	
@ 300°C	0.30 %	
OperatingTemp: : Continuous:	- 55°C to 225°C	
Intermittent:	- 55°C to 335°C	
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

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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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