EPO-TEK® OE188

Technical Data Sheet

For Reference Only

High Temperature, Low CTE Epoxy

Date: Apr 2013
Rev: VII

Recommended Cure: **150°C / 1 Hour**

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

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.

PHYSCIAL 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

Epoxies and Adhesives for Demanding Applications™

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

EPOXY TECHNOLOGY, INC.

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

www.epotek.com