

Date: Apr 2014
 Rev: VI
 No. of Components: Two
 Mix Ratio by Weight: 1 : 1
 Specific Gravity: Part A: 1.15 Part B: 1.22
 Pot Life: 24 Hours
 Shelf Life: One year at room temperature

Recommended Cure: 150°C / 1 Hour

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[®] 377 is a two component, high Tg, fiber optic grade epoxy. It is well suited for semiconductor, medical and optical 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: Clear/Colorless	Part B: Amber
* Consistency	Pourable liquid	
* Viscosity (23°C): @ 100 rpm	150 - 300 cPs	
Thixotropic Index:	N/A	
* Glass Transition Temp:	≥ 95 °C (Dynamic Cure:20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min)	
Coefficient of Thermal Expansion (CTE):		
Below Tg:	57 x 10 ⁻⁶ in/in°C	
Above Tg:	210 x 10 ⁻⁶ in/in°C	
Shore D Hardness:	67	
Lap Shear @ 23°C:	1,456	
Die Shear @ 23°C:	≥ 10 Kg	3,400 psi
Degradation Temp:	375 °C	
Weight Loss:	@ 200°C	0.06 %
	@ 250°C	0.17 %
	@ 300°C	0.50 %
OperatingTemp: : Continuous:	- 55°C to 200°C	
	Intermittent: - 55°C to 300°C	
Storage Modulus:	373,622 psi	
Ion Content:	Cl:	26 ppm NA ⁺ : 15 ppm
	NH ₄ ⁺ :	22 ppm K ⁺ : 3 ppm
* Particle Size:	N/A	

ELECTRICAL AND THERMAL PROPERTIES:

Thermal Conductivity:	N/A
Volume Resistivity @ 23°C:	≥ 1 x 10 ¹³ Ohm-cm
Dielectric Constant (1KHz):	3.36
Dissipation Factor (1KHz):	0.005

OPTICAL PROPERTIES @ 23°C:

Spectral Transmission:	≥ 90% @ 600 - 1,000 nm
	≥ 98% @ 1,000 - 6,800 nm
Refractive Index @ 23°C (uncured):	1.5195 @ 589 nm

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EPO-TEK[®] 377 Advantages & Suggested Application Notes:

- Low viscosity epoxy with excellent handling characteristics. It can be used for encapsulating or potting. It may be applied by hand, pouring, spin coating, brushing, dipping, or automated dispensers.
- Certified for USP Class VI biocompatibility and approved for ISO 10993.
- NASA approved, low outgassing epoxy – <http://outgassing.nasa.gov/>
- Suggested Medical Applications / Scientific OEM:
 - ◇ Potting fiber ferrules for endoscopes.
 - ◇ Outstanding high temperature properties at 300°C and excellent solvent, chemical and moisture resistance, including autoclave, ETO, and gamma radiation.
- Suggested Semiconductor Grade epoxy:
 - ◇ Spin coating at wafer level for MEMS fabrication of pressure sensors and accelerometers.
 - ◇ Wafer-to-wafer bonding in CSP.
 - ◇ Capillary underfill of flip chip packaged die.
- Suggested Optical grade epoxy, opto-electronic packaging:
 - ◇ Transmission in NIR from 700 – 900 nm >95%.
 - ◇ Glass seal, hermetic seal of glass plates in LCD fabrication.
 - ◇ Hermetic seal of IR-filter window to aluminum cap of TO-Can in hybrid packaged IR sensors.
- Suggested Industrial: resist salt water, hydraulic fluids, motor oil, alcohol, 10% nitric acid, 10% sulfuric acid, 10% ammonia solution and most solvents.

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