

Date: Mar 2015 **Rev:** IX
No. of Components: Two
Mix Ratio by Weight: 20 : 5
Specific Gravity: Part A: 1.15 Part B: 0.87
Pot Life: 1-2 Hours
Shelf Life- Bulk: One year at room temperature

Recommended Cure: **65°C / 2 Hours**

Minimum Alternative Cure(s):
may not achieve performance properties below
 65°C / 1 Hour
 23°C / 24 Hours

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) may vary from those stated below when syringe packaging and/or post-processing is required.
- Syringe packaging will impact initial viscosity and effective pot life, potentially beyond stated parameters.
- **TOTAL MASS SHOULD NOT EXCEED 25 GRAMS**

Product Description: EPO-TEK® 301 is a two component, room temperature curing, medical grade epoxy featuring very low viscosity, and excellent optical-mechanical properties.

Typical Properties: *Cure condition: varies as required *denotes test on lot acceptance basis Data below is not guaranteed. To be used as a guide only, not as a specification. Different batches, conditions & applications yield differing results.*

PHYSICAL PROPERTIES:

* Color (before cure):	Part A: Clear/Colorless	Part B: Clear/Colorless
* Consistency:	Pourable liquid	
* Viscosity (23°C) @ 100 rpm:	100-200 cPs	
Thixotropic Index:	N/A	
* Glass Transition Temp:	≥ 65 °C (Dynamic Cure:20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min)	
Coefficient of Thermal Expansion (CTE):		
	Below Tg:	39 x 10 ⁻⁶ in/in°C
	Above Tg:	98 x 10 ⁻⁶ in/in°C
Shore D Hardness:	85	
Lap Shear @ 23°C:	> 2,000 psi	
Die Shear @ 23°C:	≥ 10 Kg	3,400 psi
Degradation Temp:	430 °C	
Weight Loss:	@ 200°C	0.12 %
	@ 250°C	0.13 %
	@ 300°C	0.39 %
Suggested Operating Temperature:	< 300 °C (Intermittent)	
Storage Modulus:	327,463 psi	
* Particle Size:	N/A	

ELECTRICAL AND THERMAL PROPERTIES:

Volume Resistivity @ 23°C:	≥ 1 x 10 ¹³ Ohm-cm
Dielectric Constant (1KHz):	4.00
Dissipation Factor (1KHz):	0.016

OPTICAL PROPERTIES @ 23°C:

Spectral Transmission:	≥ 99% @ 382-980 nm
	≥ 97% @ 980-1,640 nm
	≥ 95% @ 1,640-2,040 nm
Index of Refraction:	1.519 @ 589 nm

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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.

EPO-TEK[®] 301 Advantages & Suggested Application Notes:

- Semiconductor: optical glob top or underfill; adhesion to common wafer passivation, solder mask and flex circuits; compatible with LED die, Si, GaAs.
- PCB: general potting and protection over FR4, flex, or ceramic PCBs.
- Medical:
 - It is NONTOXIC-complies with ISO 10993 biocompatibility testing and certified for USP Class VI biocompatibility standards. Suggested for medical devices such as catheters, hand tooling, dental, and endoscopic products; adhesion to stainless steel, titanium, and most plastics; resisting sterilizing techniques like ETO, gamma, and autoclave (65°C/1 hour cure); resisting X-ray radiation; potting and protection of scintillator crystals; CT Detector packaging; adhesive for the optical beam pathway in photo-diode arrays.
 - Successfully passed 12-week implant study for biocompatibility.
 - Compatible with CIDEX[®] OPA sterilization.
- Fiber Optic:
 - Adhesive for glass and plastic fibers; wicking into fiber bundles used in patch cords, endoscopes or sensor devices; adhesive/seal/encapsulant used for fiber packaging and components; transmission of IR up to 2500 nm; terminating fibers into ferrules; fiber coupling and splicing.
- Opto-electronic:
 - LCD/LED adhesive for laminating glass layers; adhesion to PET plastic; general potting, encapsulation, and protection; spectral transmission in VIS and IR light; adhesive/encapsulant for VCSEL's packaged devices; resisting yellowing per ASTM D1925; adhesive for precision optics including lens, prism, beam splitter cubes, mirrors, and diodes, found in medical, university, or research communities.
- NASA approved, low outgassing epoxy - <http://outgassing.nasa.gov/>

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