

Number of Components:	Two	Minimum Bond Line Cure Schedule*:	
Mix Ratio By Weight:	100:45	65°C	3 Hours
Specific Gravity:		23°C	24 Hours
Part A	1.20		
Part B	0.96		
Pot Life:	1 Hour		
Shelf Life:	One year at room temperature		

Note: Container(s) should be kept closed when not in use. \*Please see Applications Note available on our website.  
- TOTAL MASS SHOULD NOT EXCEED 25 GRAMS -

### Product Description:

EPO-TEK<sup>®</sup> 302-3M is a two component epoxy used for optical, medical, fiber optic, and semiconductor applications. The epoxy is good for adhesive joining, sealing, potting, or as a coating.

### EPO-TEK<sup>®</sup> 302-3M Advantages & Application Notes:

- Low viscosity, clear and colorless epoxy is well suited for potting applications, and for transmitting VIS or NIR light in opto-circuits.
- Excellent water, chemical, and solvent resistant properties including 10% nitric acid, acetone, hexane, and dichloromethane.
- Suggested Applications:
  - Fiber Optic/Optical:
    - Potting and encapsulation; lens and prism bonding for Scientific / OEM instruments; LED encapsulant.
    - Transmission in the VIS/NIR range from 350 – 1550 nm. Can be used in the optical pathway.
    - Potting or sealing the fiber into the snout of the opto-package.
    - Adhesive for V-groove, fiber arrays or lens arrays.
    - Bonding optical fibers into ferrules. Fibers of glass or plastic. Ferrules of glass, quartz, stainless steel, kovar, or ceramic.
  - Semiconductor:
    - Recommended for underfilling of flip chips or SMDs on PCB; can also be used for COB glob top process using a DAM/FILL method; can resist 85/85 moisture soaks, as well as Tcycles and Tshocks.
  - Medical:
    - Wicking into fiber optic bundles for endoscopes or light guides; very good autoclave resistance.
    - Adhesion to stainless steel metal, ceramic, titanium and most plastics.
    - USP Class VI bio-compatible.
- NASA APPROVED low outgassing epoxy per ASTM E595. <http://outgassing.nasa.gov/>

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

Physical Properties:	
*Color: Part A: Clear/Colorless Part B: Clear/Colorless	Weight Loss:
*Consistency: Pourable Liquid	@ 200°C:
*Viscosity (@ 100 RPM/23°C): 800 – 1,600 cPs	@ 250°C: 0.77%
Thixotropic Index: N/A	@ 300°C: 1.22%
*Glass Transition Temp.(Tg): ≥ 55°C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)	Operating Temp:
Coefficient of Thermal Expansion (CTE):	Continuous: -55°C to 175°C
Below Tg: 56 x 10 <sup>-6</sup> in/in/°C	Intermittent: -55°C to 250°C
Above Tg: 193 x 10 <sup>-6</sup> in/in/°C	Storage Modulus @ 23°C: 251,532 psi
Shore D Hardness: 80	Ions: Cl <sup>-</sup> 42 ppm
Lap Shear Strength @ 23°C: > 2,000 psi	Na <sup>+</sup> 10 ppm
Die Shear Strength @ 23°C: ≥ 10 Kg / 3,400 psi	NH <sub>4</sub> <sup>+</sup> 1 ppm
Degradation Temp. (TGA): 351°C	K <sup>+</sup> 4 ppm
	*Particle Size: N/A
Optical Properties @ 23°C:	
Index of Refraction @ 23°C: 1.5446 @ 589 nm	Spectral Transmission: > 95% @ 460-1620 nm
Electrical & Thermal Properties:	
Thermal Conductivity: N/A	Volume Resistivity @ 23°C: ≥ 1 x 10 <sup>13</sup> Ohm-cm
Dielectric Constant (1KHz): 3.39	Dissipation Factor (1KHz): 0.0061

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