EPO-TEK® 302-3M

Technical Data Sheet

For Reference Only

Optically Transparent Epoxy

Number of Components:	Two
Mix Ratio By Weight:	100:45
Specific Gravity:	
Part A	1.20
Part B	0.96
Pot Life:	1 Hour
Shelf Life:	One year at room temperature

Minimum Bond Line Cure Schedule*:

65°C	3 Hours
23°C	24 Hours

*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® 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® 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 dicholormethane.
- 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.
- Passes NASA low outgassing standard ASTM E595 with proper cure - http://outgassing.nasa.gov/
- This product has been tested and satisfies low halogen requirements.

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:** **Continuous:** -55°C to 175°C **Intermittent:** -55°C to 250°C
Coefficient of Thermal Expansion (CTE):	**Storage Modulus @ 23°C:** 251,532 psi
Below Tg: 56 x 10^{-6} in/in/°C	**Ions:** Cl^- 42 ppm
Above Tg: 193 x 10^{-6} in/in/°C	Na^+ 10 ppm
Shore D Hardness: 80	NH_4^+ 1 ppm
Lap Shear Strength @ 23°C: > 2,000 psi	K^+ 4 ppm
Die Shear Strength @ 23°C: ≥ 10 Kg / 3,400 psi	***Particle Size:** N/A
Degradation Temp. (TGA): 351°C	
Optical Properties @ 23°C:	
Refractive Index @ 23°C (uncured): 1.5446 @ 589 nm	**Spectral Transmission:** > 95% @ 460-1620 nm
Electrical & Thermal Properties:	
Thermal Conductivity: N/A	**Volume Resistivity @ 23°C:** ≥ 1 x 10^{13} Ohm-cm
Dielectric Constant (1KHz): 3.39	**Dissipation Factor (1KHz):** 0.0061

EPOXY TECHNOLOGY, INC.
14 Fortune Drive, Billerica, MA 01821-3972 **Phone**: 978.667.3805 **Fax**: 978.663.9782
www.EPOTEK.com

Epoxies and Adhesives for Demanding Applications™

Rev. VIII
Apr 2010