EPO-TEK® 302-3M

Technical Data Sheet
For Reference Only
Optically Transparent Epoxy

Date:	August 2024		**Recommended Cure: 65°C / 3 Hours**
Rev:	XIV		
No. of Components:	Two		Minimum Alternative Cure(s):
Mix Ratio by Weight:	100 : 45		*May not achieve performance properties listed below*
Specific Gravity:	Part A: 1.20	Part B: 0.96	23°C / 24 Hours
Pot Life:	1 Hour		
Shelf Life- Bulk:	One year at room temperature		

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) of the product may vary from those stated on the data sheet when bi-pak/syringe packaging or post-processing of any kind is performed. Epoxy's warranties shall not apply to any products that have been reprocessed or repackaged from Epoxy's delivered status/container into any other containers of any kind, including but not limited to syringes, bi-paks, cartridges, pouches, tubes, capsules, films or other packages.
- Syringe packaging will impact initial viscosity and effective pot life, potentially beyond stated parameters.
- *TOTAL MASS SHOULD NOT EXCEED 25 GRAMS*
- *Contact techserv@epotek.com for alternatives designed to meet European regulatory requirements.*
- If product crystallizes in storage, place container in warm oven until crystallization disappears. Please refer to Tech Tip #7 on website.

Product Description: EPO-TEK® 302-3M is a two component epoxy used for optical, fiber optic, and semiconductor applications. The epoxy is good for adhesive joining, sealing, potting, or as a coating.

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

PHYSICAL PROPERTIES:			
* Color (before cure):	Part A: Clear/Colorless	Part B: Clear/Colorless	
* Consistency:	Pourable liquid		
* Viscosity (23°C) @ 100 rpm:	800 - 1,600	cPs	
Thixotropic Index:	N/A		
* Glass Transition Temp:	≥ 55	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
Below Tg:	56	x 10^{-6} in/in°C	
Above Tg:	193	x 10^{-6} in/in°C	
Shore D Hardness:	80		
Lap Shear @ 23°C:	> 2,000	psi	
Die Shear @ 23°C:	≥ 10	Kg	3,556 psi
Degradation Temp:	351	°C	
Weight Loss:			
@ 250°C:	0.77	%	
@ 300°C:	1.22	%	
Suggested Operating Temperature:	< 250	°C (Intermittent)	
Storage Modulus @ 23°C	456,443	psi	
Ion Content:	Cl^-: 42 ppm	Na^+: 10 ppm	
	NH_4^+: 1 ppm	K^+: 4 ppm	

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	N/A	
Volume Resistivity @ 23°C:	≥ 1 x 10^{13}	Ohm-cm
Dielectric Constant (1KHz):	3.39	
Dissipation Factor (1KHz):	0.006	

OPTICAL PROPERTIES @ 23°C:		
Spectral Transmission:	> 95% @ 460-1620	nm
Refractive Index (uncured):	1.5446 @589	nm

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A Meridian Adhesives Group Company

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EPO-TEK® 302-3M Advantages & Suggested 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

- Passes NASA low outgassing standard ASTM E595 with proper cure - http://outgassing.nasa.gov/

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