

**Date:** August 2024  
**Rev:** VIII  
**No. 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- Bulk:** One year at room temperature

**Recommended Cure: 65°C / 3 Hours**

Minimum Alternative Cure(s):  
*May not achieve performance properties listed below*  
 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) 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**
- Black color is cosmetic only, and not intended to be photonic, spectral, or lampblack. All users need to confirm its opacity versus wavelength.
- Contact [techserv@epotek.com](mailto:techserv@epotek.com) for alternatives designed to meet European regulatory requirements.

**Product Description:** EPO-TEK® 302-3M Black is a two component room temperature curing epoxy used for optical, fiber optic, and semiconductor applications. The system offers excellent joining, sealing, potting, and 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: Black	Part B: Clear/Yellow tint	
* 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 <sup>-6</sup> in/in°C
	Above Tg:	193	x 10 <sup>-6</sup> 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:	251,532 psi		
Ion Content:	Cl <sup>-</sup> :	42 ppm	Na <sup>+</sup> : 10 ppm
	NH <sub>4</sub> <sup>+</sup> :	1 ppm	K <sup>+</sup> : 4 ppm
* Particle Size:	≤ 20 microns		
ELECTRICAL AND THERMAL PROPERTIES:			
Thermal Conductivity:	N/A		
Volume Resistivity @ 23°C:	≥ 5 x 10 <sup>12</sup>	Ohm-cm	
Dielectric Constant (1KHz):	3.41		
Dissipation Factor (1KHz):	0.011		
OPTICAL PROPERTIES @ 23°C:			
Spectral Transmission:	< 10% @ 900	nm	
	< 20% @ 1,320	nm	
	< 45% @ 2,500	nm	
Refractive Index:	N/A		

Epoxyes and Adhesives for Demanding Applications™

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.

EPOXY TECHNOLOGY, INC.

14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805, FAX (978) 663-9782

[www.epotek.com](http://www.epotek.com)

**EPO-TEK® 302-3M Black Advantages & Suggested Application Notes:**

- Low viscosity, black epoxy is well suited for potting applications and for light blocking in optoelectronics applications.
- Excellent water, chemical, and solvent resistant properties including 10% nitric acid, acetone, hexane, and dichloromethane.
- Suggested Applications:
  - Fiber Optic/Optical:
    - Potting and encapsulation; light blocking and optics sealing applications
    - Passive fiber sealing in opto-packages
    - 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 T-cycles and T-shocks
- For an ISO 10993 biocompatible version, see EPO-TEK® MED-302-3M BLACK

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