

**Date:** September 2017  
**Rev:** IV  
**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**
- 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, medical, 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) @ 20 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™**

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**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 Tcycles and Tshocks

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