

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 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 ⁻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:	251,532	psi		
Ion Content:	Cl ⁻ : 42 ppm	Na ⁺ : 10 ppm		
	NH ₄ ⁺ : 1 ppm	K ⁺ : 4 ppm		
* Particle Size:	≤ 20	microns		
ELECTRICAL AND THERMAL PROPERTIES:				
Thermal Conductivity:	N/A			
Volume Resistivity @ 23°C:	≥ 5 x 10 ¹²	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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EPOXY TECHNOLOGY, INC.

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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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