

Date: August 2024
Rev: XIV
No. of Components: Two
Mix Ratio by Weight: 20 : 5
Specific Gravity: Part A: 1.15 Part B: 0.87
Pot Life: 1-2 Hours
Shelf Life- Bulk: One year at room temperature

Recommended Cure: 65°C / 2 Hours

Minimum Alternative Cure(s):
May not achieve performance properties listed below
 65°C / 1 Hour
 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**

Product Description: EPO-TEK® 301 is a two component, room temperature curing epoxy featuring very low viscosity, and excellent optical-mechanical properties.

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:	100 - 200	cPs	
Thixotropic Index:	N/A		
* Glass Transition Temp:	≥ 65	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
	Below Tg:	39	x 10 ⁻⁶ in/in°C
	Above Tg:	98	x 10 ⁻⁶ in/in°C
Shore D Hardness:	85		
Lap Shear @ 23°C:	> 2,000	psi	
Die Shear @ 23°C:	≥ 10	Kg	3,556 psi
Degradation Temp:	430	°C	
Weight Loss:			
	@ 200°C:	0.12	%
	@ 250°C:	0.13	%
	@ 300°C:	0.39	%
Suggested Operating Temperature:	< 300	°C (Intermittent)	
Storage Modulus:	436,249	psi	
* Particle Size:	N/A		

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	N/A	
Volume Resistivity @ 23°C:	≥ 1 x 10 ¹³	Ohm-cm
Dielectric Constant (1KHz):	4.00	
Dissipation Factor (1KHz):	0.016	

OPTICAL PROPERTIES @ 23°C:		
Spectral Transmission:	≥ 99% @ 382-980	nm
	≥ 97% @ 980-1,640	nm
	≥ 95% @ 1,640-2,040	nm
Refractive Index:	1.519 @ 589	nm

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

EPO-TEK® 301 Advantages & Suggested Application Notes:

- Semiconductor: optical glob top or underfill; adhesion to common wafer passivation, solder mask and flex circuits; compatible with LED die, Si, Ga As.
- PCB: general potting and protection over FR4, flex, or ceramic PCBs.
- Fiber Optic:
 - Adhesive for glass and plastic fibers; wicking into fiber bundles used in patch cords, or sensor devices; adhesive/seal/encapsulant used for fiber packaging and components; transmission of IR up to 2500 nm; terminating fibers into ferrules; fiber coupling and splicing.
- Opto-electronic:
 - LCD/LED adhesive for laminating glass layers; adhesion to PET plastic; general potting, encapsulation, and protection; spectral transmission in VIS and IR light; adhesive/encapsulant for VCSEL's packaged devices; resisting yellowing per ASTM D1925; adhesive for precision optics including lens, prism, beam splitter cubes, mirrors, and diodes, found in university, research communities.
- NASA approved, low outgassing epoxy - <http://outgassing.nasa.gov/>
- For an ISO 10993 biocompatible version, see EPO-TEK® MED-301.

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