

**Date:** July 2019  
**Rev:** VII  
**No. of Components:** Two  
**Mix Ratio by Weight:** 100 : 35  
**Specific Gravity:** Part A: 1.06 Part B: 0.89  
**Pot Life:** 10 Hours  
**Shelf Life- Bulk:** One year at room temperature  
**Shelf Life- Syringe:** Six months at -40°C

**Recommended Cure: 80°C / 3 Hours**

Minimum Alternative Cure(s):  
*May not achieve performance properties listed below*  
 23°C / 3 Days

**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.
- 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® 301-2FL is a two component optical and semiconductor grade epoxy resin. It is a more flexible version of EPO-TEK® 301-2.

**Typical Properties:** Cure condition: 80°C / 3 Hours 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:	≥ 45	°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:	211	x 10 <sup>-6</sup> in/in°C
Shore D Hardness:	70		
Lap Shear @ 23°C:	> 2,000	psi	
Die Shear @ 23°C:	≥ 10	Kg	3,556 psi
Degradation Temp:	325 °C		
Weight Loss:			
	@ 200°C:	0.50	%
	@ 250°C:	0.96	%
	@ 300°C:	3.52	%
Suggested Operating Temperature:	< 250 °C (Intermittent)		
Storage Modulus:	318,685	psi	
Ion Content:	Cl <sup>-</sup> : 105 ppm	Na <sup>+</sup> :	58 ppm
	NH <sub>4</sub> <sup>+</sup> : 8 ppm	K <sup>+</sup> :	19 ppm
Particle Size:	N/A		

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	N/A	
Volume Resistivity @ 23°C:	≥ 0.6 x 10 <sup>12</sup>	Ohm-cm
Dielectric Constant (1KHz):	3.54	
Dissipation Factor (1KHz):	0.013	

OPTICAL PROPERTIES @ 23°C:		
Spectral Transmission:	≥ 97% @ 1,000-1,600	nm
	≥ 99% @ 400-1,000	nm
Refractive Index:	1.5102 @ 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.

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**EPO-TEK® 301-2FL Advantages & Suggested Application Notes:**

- Suggested for LCD optical lamination and sealing of glass plates. The product can resist yellowing over 17 days of continuous UV light exposure. Suitable for LED encapsulation.
- Ease of use: potting and casting, encapsulation, and adhesive.
- Semiconductor applications: underfill for flip chips, glob top encapsulation over wire bonds, spin coating at wafer level.
- Compliant adhesive that will be resistant to impact or vibrations. Low stress adhesive for bonding optics inside OEM / scientific instruments.
- Fiber optic adhesive; bundling fibers, terminating fiber into ferrule, adhesive for mounting optics inside fiber components, bonding glass cover slip over V-groove; spectral transmission of visible and IR light.
- Adhesion to glass, quartz, metals, wood and most plastics is very good.
- May also be used for impregnating wooden or porous objects for artifact restoration.
- Capable of both heat cure and room temperature cure.

**Epoxy Technology, Inc.**  
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