

Date: Apr 2015 **Rev:** XII
No. of Components: Two
Mix Ratio by Weight: 100 : 35
Specific Gravity: Part A: 1.02 Part B: 0.89
Pot Life: 8 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 below
 23°C / 2 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) may vary from those stated below when syringe packaging and/or post-processing is required.
- 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[®] 301-2 is a two component optical, medical and semiconductor grade epoxy resin with low viscosity, long pot-life and good handling characteristics.

Typical Properties: *Cure condition: 80°C/3 Hours *denotes test on lot acceptance basis Data below is not guaranteed. To be used as a guide only, not as a specification. Different batches, conditions & applications yield differing results.*

PHYSICAL PROPERTIES:			
* Color (before cure):	Part A: Clear/Colorless Part B: Clear/Colorless		
* Consistency:	Pourable liquid		
* Viscosity (23°C) @ 100 rpm:	225 - 425 cPs		
Thixotropic Index:	N/A		
* Glass Transition Temp:	≥ 80 °C (Dynamic Cure:20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min)		
Coefficient of Thermal Expansion (CTE):			
	Below Tg:	61 x 10 ⁻⁶ in/in°C	
	Above Tg:	180 x 10 ⁻⁶ in/in°C	
Shore D Hardness:	80		
Lap Shear @ 23°C:	> 2,000 psi		
Die Shear @ 23°C:	≥ 15 Kg 5,100 psi		
Degradation Temp:	360 °C		
Weight Loss:	@ 200°C	0.01 %	
	@ 250°C	0.46 %	
	@ 300°C	2.19 %	
Suggested Operating Temperature:	< 300 °C (Intermittent)		
Storage Modulus:	298,719 psi		
Ion Content:	Cl:	61 ppm	NA⁺: 104 ppm
	NH₄⁺:	Not detectable	
	K⁺:	Not detectable	
Particle Size:	N/A		

ELECTRICAL AND THERMAL PROPERTIES:	
Thermal Conductivity:	N/A W/mK
Volume Resistivity @ 23°C:	≥ 2 X 10 ¹² Ohm-cm
Dielectric Constant (1KHz):	3.80
Dissipation Factor (1KHz):	0.012

OPTICAL PROPERTIES @ 23°C:	
Spectral Transmission:	≥ 94% @ 300 nm
	≥ 99% @ 400-1,200 nm
	≥ 98% @ 1,200-1,600 nm
Index of Refraction:	1.5318 @ 589 nm

Epoxy 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.

EPO-TEK[®] 301-2 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 including wafer level packaging.
- 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.
- BIOCOMPATIBLE and NON-TOXIC; Complies with ISO 10993 biocompatibility testing and certified for USP Class VI biocompatibility standards.
- 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.
- May also be used for impregnating wooden or porous objects for artifact restoration.
- NASA approved, low outgassing epoxy – <http://outgassing.nasa.gov/>

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.