EPO-TEK® 301-2FL

Technical Data Sheet
For Reference Only
Low Stress, Optical Epoxy

Date: Nov 2014 **Rev:** III **Recommended Cure:** **80°C / 3 Hours**

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

Minimum Alternative Cure(s):
may not achieve performance properties 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) may vary from those stated below when syringe packaging and/or post-processing is required.
- If product crystalizes 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, medical and semiconductor grade epoxy resin. It is a more flexible version of EPO-TEK® 301-2.

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	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^{-6} in/in°C		
	Above Tg:	211	x 10^{-6} in/in°C		
	Shore D Hardness:	70			
	Lap Shear @ 23°C:	> 2,000	psi		
	Die Shear @ 23°C:	≥ 10	Kg	3,400	psi
	Degradation Temp:	325	°C		
	Weight Loss: @ 200°C	0.50	%		
	@ 250°C	0.96	%		
	@ 300°C	3.52	%		
	OperatingTemp: : Continuous:	- 55°C to 150	°C		
	Intermittent:	- 55°C to 250	°C		
	Storage Modulus:	152,946	psi		
	Ion Content: **Cl:**	105	ppm	**NA^+:**	58 ppm
	NH_4^+:	8	ppm	**K^+:**	19 ppm
	Particle Size:	N/A			

ELECTRICAL AND THERMAL PROPERTIES:

Thermal Conductivity:	N/A
Volume Resistivity @ 23°C:	≥ 0.6 x 10^{12} 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 @ 23°C (uncured):	1.5115 @ 589 nm

The data above is INITIAL only - it may be changed at anytime, for any reason without notice to anyone. It is provided only as a guide for evaluation/consideration.

*These material characteristics are typical properties that are based on a limited number of samples/batches. All properties are based on the cure indicated above. Some properties may vary as manufactured quantities are scaled up to commercialized production levels.

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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.
- BIOCOMPATIBLE and NON-TOXIC; complies with USP Class VI biocompatibility standards for medical devices and implantation applications.
- 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.

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