EPO-TEK® 301-2FL

Technical Data Sheet
For Reference Only
Low Stress, Optical Epoxy

Date:	April 2020		**Recommended Cure: 80°C / 3 Hours**
Rev:	IX		
No. of Components:	Two		Minimum Alternative Cure(s):
Mix Ratio by Weight:	100 : 35		*May not achieve performance properties listed below*
Specific Gravity:	Part A: 1.15	Part B: 0.95	23°C / 3 Days
Pot Life:	10 Hours		
Shelf Life- Bulk:	One year at room temperature		

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 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 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^{-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	3,556 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^-: 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:	1.5102 @ 589	nm

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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.

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