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EPO-TEK® 301-2

Technical Data Sheet
For Reference Only
Optically Transparent Epoxy

Date:	February 2021	
Rev:	XVIII	
No. of Components:	Two	
Mix Ratio by Weight:	100 : 35	
Specific Gravity:	Part A: 1.15	Part B: 0.95
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 listed below
23°C / 48 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.
- 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® 301-2 is a two component optical and semiconductor grade epoxy resin with low viscosity, long pot-life and good handling characteristics.

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:	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	5,334 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:	432,279	psi	
Ion Content:	Cl^-: 61 ppm	Na^+: 104 ppm	
	NH_4^+: ND	K^+: ND	
Particle Size:	N/A		

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	N/A	
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% @ 320	nm
	≥ 99% @ 400-1,200	nm
	≥ 98% @ 1,200-1,600	nm
Refractive Index:	1.5318 @ 589	nm

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® 301-2 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.
- 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.
- NASA approved, low outgassing epoxy – http://outgassing.nasa.gov/

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