

Date: February 2021
Rev: VI
No. of Components: Two
Mix Ratio by Weight: 20 : 5
Specific Gravity: Part A: 1.14 Part B: 0.87
Pot Life: 1 - 2 Hours
Shelf Life- Bulk: One year at room temperature

Recommended Cure: 65°C / 2 Hours

Minimum Alternative Cure(s):
May not achieve performance properties below
 65°C / 1 Hour
 23°C / 24 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.
- Syringe packaging will impact initial viscosity and effective pot life, potentially beyond stated parameters.
- **TOTAL MASS SHOULD NOT EXCEED 25 GRAMS**

Product Description: EPO-TEK® 301-1 is a two component, room temperature curing epoxy featuring very low viscosity and excellent optical and mechanical properties. It is a lower viscosity version of EPO-TEK® 301.

Typical Properties: Cure condition: 65°C / 2 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:	80 - 100	cPs	
Thixotropic Index:	N/A		
* Glass Transition Temp:	≥ 65	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
Below Tg:	54	x 10 ⁻⁶ in/in°C	
Above Tg:	175	x 10 ⁻⁶ in/in°C	
Shore D Hardness:	80		
Lap Shear @ 23°C:	1,100	psi	
Die Shear @ 23°C:	≥ 5	Kg	1,778 psi
Degradation Temp:	390	°C	
Weight Loss:			
@ 200°C:	0.44	%	
@ 250°C:	0.84	%	
@ 300°C:	1.59	%	
Suggested Operating Temperature:	< 300	°C (Intermittent)	
Storage Modulus:	224,700	psi	
Particle Size:	N/A		

ELECTRICAL AND THERMAL PROPERTIES:			
Thermal Conductivity:	N/A		
Volume Resistivity @ 23°C:	≥ 3 x 10 ¹³	Ohm-cm	
Dielectric Constant (1KHz):	4.26		
Dissipation Factor (1KHz):	0.021		

OPTICAL PROPERTIES @ 23°C:			
Spectral Transmission:	> 97% @ 400-1400	nm	
	> 92% @ 1400-1600	nm	
Refractive Index:	1.5168 @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.

EPOXY TECHNOLOGY, INC.

14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805, FAX (978) 663-9782

www.epotek.com

EPO-TEK® 301-1 Advantages & Suggested Application Notes:

- Semiconductor: optical encapsulation as the fill in a dam and fill or as a capillary wicking underfill.
 - Great adhesion to glass, metals, solder masks, flexible circuits, ceramic PCBs, and many engineering plastics
- PCB: general potting and protection
- Fiber Optic:
 - Strong adhesion to glass and plastic fiber optics. Used to wick into fiber bundles such as patch cords, endoscopes, and sensor devices.
 - Seals fiber packaging as well as including in the active pathway as it offers transmission up to 2500 nm.
 - Used in terminating fibers into ferrules as well as in fiber coupling and splicing.
- Opto-electronic:
 - Optically clear material used in both the active light path as well as general protection. Used as both a low viscosity potting as well as a sealing and encapsulation material. Very low yellowing and shrinkage optimal for precision optics such as prisms, beam splitter cubes, mirrors, and diodes.

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