

Date: July 2019
Rev: VIII
No. of Components: Two
Mix Ratio by Weight: 10 : 1
Specific Gravity: Part A: 1.20 Part B: 1.15
Pot Life: 3 Days
Shelf Life- Bulk: One year at room temperature
Shelf Life- Syringe: Six months at -40°C

Recommended Cure: 150°C / 1 Hour

Minimum Alternative Cure(s):
May not achieve performance properties listed below
 150°C / 10 Minutes
 120°C / 30 Minutes
 80°C / 2 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.
- **TOTAL MASS SHOULD NOT EXCEED 25 GRAMS**

Product Description: EPO-TEK® 354 is a two component, high Tg epoxy designed for semiconductor packaging in medical, fiber optic and optoelectronic assemblies. It is an electrically and thermally insulating epoxy.

Typical Properties: Cure condition: 150°C / 1 Hour 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: Dark amber	
* Consistency:	Pourable liquid		
* Viscosity (23°C) @ 50 rpm:	4,000 - 6,000	cPs	
Thixotropic Index:	N/A		
* Glass Transition Temp:	≥ 95	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
	Below Tg:	96	x 10 ⁻⁶ in/in°C
	Above Tg:	175	x 10 ⁻⁶ in/in°C
Shore D Hardness:	82		
Lap Shear @ 23°C:	1,668	psi	
Die Shear @ 23°C:	≥ 10	Kg	3,556 psi
Degradation Temp:	487	°C	
Weight Loss:			
	@ 200°C:	0.50	%
	@ 250°C:	0.70	%
	@ 300°C:	0.85	%
Suggested Operating Temperature:	< 350	°C (Intermittent)	
Storage Modulus:	356,376	psi	
Ion Content:	Cl ⁻ : 81 ppm	Na ⁺ :	17 ppm
	NH ₄ ⁺ : 300 ppm	K ⁺ :	9 ppm
Particle Size:	N/A		

ELECTRICAL AND THERMAL PROPERTIES:			
Thermal Conductivity:	N/A		
Volume Resistivity @ 23°C:	≥ 2 x 10 ¹³	Ohm-cm	
Dielectric Constant (1KHz):	3.48		
Dissipation Factor (1KHz):	0.004		

OPTICAL PROPERTIES:			
Spectral Transmission:	> 96% @ 600	nm	
	> 99% @ 800	nm	
Refractive Index (uncured):	1.5734 @ 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.

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EPO-TEK® 354 Advantages & Suggested Application Notes:

- Extended pot-life of many days which allows low waste between manufacturing shifts.
- Built-in color change upon cure. Users can determine cure by visual means due to a red-amber color change from slight yellow.
- Suggested Applications:
 - Semiconductor: capillary underfill below flip chip mounted die or SMDs.
 - Opto-electronic: %Transmission in the IR from 800 – 2000 nm range, adhesion to Si, glass, ceramic and metals.
 - Fiber Optic: sealing fiber into ferrules, optical connectors, adhesion to quartz, Au, kovar, stainless steel, packaging of Fiber Optic components.
- Designed to be a longer pot-life alternative to EPO-TEK® 353ND, it may be used in similar applications and devices.
- Capable of being syringe dispensed in mass production. Its medium viscosity lends itself to adhesive, sealing, potting and encapsulation.

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