

Date: September 2019
Rev: III
No. of Components: Two
Mix Ratio by Weight: 10 : 1
Specific Gravity: Part A: 1.20 Part B: 1.09
Pot Life: 24 Hours
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 below
 90°C / 30 Minutes

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® 323LP-LH Ultra is a longer pot life version of EPO-TEK® 353ND designed for semiconductor, hybrid, fiber-optic, hard -disk drive and medical applications. This product easily meets halogen-free requirements.

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 to slight yellow	Part B: Yellow	
* Consistency:	Pourable liquid		
* Viscosity (23°C) @ 50 rpm:	3,500-5,000	cPs	
Thixotropic Index:	N/A		
* Glass Transition Temp:	≥ 110	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
	Below Tg:	31	x 10 ⁻⁶ in/in°C
	Above Tg:	132	x 10 ⁻⁶ in/in°C
Shore D Hardness:	88		
Lap Shear @ 23°C:	> 2,000	psi	
Die Shear @ 23°C:	≥ 20	Kg	7,112 psi
Degradation Temp:	413	°C	
Weight Loss:			
	@ 200°C:	0.48	%
	@ 250°C:	0.71	%
	@ 300°C:	1.24	%
Suggested Operating Temperature:	< 350	°C (Intermittent)	
Storage Modulus:	387,556	psi	
Ion Content	Cl ⁻ :	27 ppm	Na ⁺ : 2 ppm
	NH ₄ ⁺ :	519 ppm	K ⁺ : 4 ppm
Particle Size:	N/A		

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	N/A	
Volume Resistivity @ 23°C:	≥ 3 x 10 ¹²	Ohm-cm
Dielectric Constant (1KHz):	2.62	
Dissipation Factor (1KHz):	0.003	

OPTICAL PROPERTIES @ 23°C:		
Spectral Transmission:	> 90% @ 640-800	nm
	> 94% @ 820-1620	nm
Refractive Index:	1.5704 @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® 323LP-LH Ultra Advantages & Suggested Application Notes:

- Extended 24 hour pot life to promote low wastage and mass production over an entire shift
- Meets Low Halogen standards meaning the adhesive contains less than 1500ppm total halogens and less than 900ppm chlorine and less than 900 ppm bromine
- 323LP-LH Ultra changes to a dark amber color when properly cured for easy visual inspection
- Semiconductor wafer to wafer bonding of CSP; fabrications of MEMs devices; flip chip underfill
- In hybrids 323LP-LH Ultra provides near hermetic sealing in sensor devices, resists high temperature and is used in down-hole petrochemical fiber optic sensors resisting more than 250°C for extended periods of time
- Fiber optic adhesive designed to meet Telcordia 1221 commonly used sealing fiber into ferrules, transmitting light in the optical pathways from 800-1550 nm, used in fiber component packaging, active alignment of optics, environmental seal of opto-packages, and V-groove arrays
- In electronic assembly it's used as a dielectric layer in the fabrication of capacitors, laminating PZT piezoelectric, impregnating copper coil windings, and bonding ferrite cores and magnets

Epoxy Technology, Inc.
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.

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