Manufacturer:
Epoxy Technology

Product Name:
EPO-TEK® 323LP High Temperature Epoxy, Heat Cure (2.5g)

Manufacturer Part Number:
ET323LP-2.5G

EPO-TEK® 323LP

Technical Data Sheet
For Reference Only
Optical Epoxy

Date:	February 2021		
Rev:	XI		
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:	One year at -40°C		

Recommended Cure: 150°C / 1 Hour

Minimum Alternative Cure(s):
May not achieve performance properties listed 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.

Product Description: EPO-TEK® 323LP is a two component, high temperature epoxy designed for semiconductor, hybrid, fiber, and optical applications. It is a longer pot life alternative of EPO-TEK® 353ND.

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:	≥ 100	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
Below Tg:	51	x 10^{-6} in/in°C	
Above Tg:	185	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:	0.31	%	
@ 250°C:	0.46	%	
@ 300°C:	0.85	%	
Suggested Operating Temperature:	< 300	°C (Intermittent)	
Storage Modulus:	444,110	psi	
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:	≥ 94% @ 820-1,620	nm
	≥ 90% @ 640-800	nm
Refractive Index:	1.5704 @ 589	nm

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EPO-TEK® 323LP Advantages & Suggested Application Notes:

- 24 hour pot life to promote mass production usage. It has an amber color change upon cure.
- Semiconductor:
  - Wafer to wafer bonding of CSP; fabrication of MEMs devices; flip chip underfill.
- Hybrid:
  - Providing near hermetic seals and UHV seals in sensor devices, resisting high temperature packaging.
  - Down-Hole petrochemical fiber optic sensors, resisting >200°C field conditions.
- Fiber optic adhesive designed to meet Telecordia 1221:
  - Sealing fiber into ferrules, transmitting light in the optical pathway from 800-1,550 nm range.
  - Fiber component packaging; adhesive for active alignment of optics, environmental seal of opto-package, V-groove arrays.
- Electronic Assembly:
  - Used as dielectric layer in the fabrication of capacitors; laminating PZT peizoelectrics.
  - Impregnating and insulating copper coil windings in motors and inductor coils. Bonding ferrite cores and magnets.