Date: July 2019
Recommended Cure: 150°C / 1 Hour

Rev: IX

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

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 10¹² 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
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 piezoelectrics.
  - Impregnating and insulating copper coil windings in motors and inductor coils. Bonding ferrite cores and magnets.