EPOXY TECHNOLOGY

EPO-TEK® 375
Technical Data Sheet
For Reference Only
High Temperature Epoxy

			Minimum Bond Line Cure Schedule*:	
Number of Components:	Two		150°C	5 Minutes
Mix Ratio By Weight:	10:1		120°C	20 Minutes
Specific Gravity:			100°C	60 Minutes
Part A	1.2		80°C	90 Minutes
Part B	1.0			
Pot Life:	4 Hours			
Shelf Life:	One year at room temperature			

*Note: Container(s) should be kept closed when not in use. *Please see Applications Note available on our website.*

Product Description:

EPO-TEK® 375 is a two component, high temperature epoxy designed for semiconductor, hybrid, fiber optic, and medical applications. Also available in a single component frozen syringe.

EPO-TEK® 375 Advantages & Application Notes:

- Reasonable pot-life that allows for low temperature curing to be realized. It has an amber color change upon cure.
- Semiconductor suggested applications: wafer-wafer bonding of CSP; fabrication of MEMs devices; flip chip underfill.
- Hybrid suggested applications: providing near hermetic seals and UHV seals in sensor devices and resisting high temperature packaging.
  - Down-hole petrochemical fiber optic sensors resisting >200°C field conditions.
- Fiber optic adhesive suggested applications:
  - Sealing fiber into ferrules, transmitting light in the optical pathway from 800- 1550 nm range.
  - Fiber component packaging, adhesive for active alignment of optics, environmental seal of opto-package, V-groove arrays.
- Medical suggested applications:
  - Potting fiber optic bundles into ferrules for light guides and endoscopes; capable of resisting several sterilization techniques including ETO, gamma, ION beam, H202 plasma, and >200 autoclave steam cycles; excellent adhesion to surfaces including stainless steel, diamond, titanium, brass, ceramics, glass and most plastics.
  - Certified to USP Class VI Biocompatibility Standards for medical implants; adhesive for catheter devices including stents and guide wires.
- Electronics Assembly suggested applications:
  - Used as dielectric layer in the fabrication of capacitors; laminating PZT ferroelectrics found in ultrasound or ink-jetting devices.
  - Impregnating and insulating copper coil windings in motors and inductor coils. Bonding ferrite cores and magnets.
  - Structural grade epoxy found in hard-disk drive devices; bonding of stainless steel metals, kapton, and magnets.

Typical Properties: ***(To be used as a guide only, not as a specification. Data below is not guaranteed. Different batches, conditions and applications yield differing results; Cure condition: 150°C/1 Hour ; * denotes test on lot acceptance basis)***

Physical Properties:	
***Color:** **Part A:** Clear/Colorless **Part B:** Amber	**Die Shear Strength @ 23°C:** ≥ 10 Kg / 3,400 psi
***Consistency:** Pourable liquid	**Degradation Temp. (TGA):** 421°C
***Viscosity (@ 50 RPM/23°C):** 3,000 – 5,000 cPs	**Weight Loss:**
Thixotropic Index: N/A	**@ 200°C:** 0.06%
***Glass Transition Temp.(Tg):** ≥ 100°C (Dynamic Cure	**@ 250°C:** 0.16%
20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)	**@ 300°C:** 0.49%
Coefficient of Thermal Expansion (CTE):	**Operating Temp:**
Below Tg: 48 x 10^{-6} in/in/°C	**Continuous:** - 55°C to 200°C
Above Tg: 192 x 10^{-6} in/in/°C	**Intermittent:** - 55°C to 300°C
Shore D Hardness: 88	**Storage Modulus @ 23°C:** 339,358 psi
Lap Shear Strength @ 23°C: > 2,000 psi	***Particle Size:** N/A
Optical Properties @ 23°C:	
Index of Refraction @ 23°C: 1.5692 @ 589 nm	**Spectral Transmission @ 23°C:** >94% @ 600 - 790nm >98% @ 800 – 1500nm
Electrical & Thermal Properties:	
Thermal Conductivity: N/A	**Volume Resistivity @ 23°C:** ≥1 x 10^{13} Ohm-cm
Dielectric Constant (1KHz): 3.34	**Dissipation Factor (1KHz):** 0.004

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