EPOXY TECHNOLOGY

EPO-TEK® T7139
Technical Data Sheet
For Reference Only
Glob Top Epoxy

Number of Components:	Two
Mix Ratio By Weight:	10:1
Specific Gravity:	
Part A	1.31
Part B	1.34
Pot Life:	1 Day
Shelf Life:	One year at room temperature

Minimum Bond Line Cure Schedule*:

150°C	30 Minutes
125°C	60 Minutes

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

Product Description:

EPO-TEK® T7139 is a two component, electrically insulating, encapsulating epoxy designed for semiconductor glob top applications and package assembly.

EPO-TEK® T7139 Advantages & Application Notes:

- A pot life of at least one day is mass production friendly and convenient for consecutive manufacturing shifts.
- Its thixotropic nature allows for dispensing “domes or hemispheres” directly over the IC without the need for using a dam or cavity to control flow.
- Suggested Applications:
  - Semiconductor:
    - Glob top encapsulant for COB die attach.
    - Plastic semiconductor package filling instead of traditional epoxy transfer molding compound.
  - Electronic/PCB: general protection of SMDs.
  - Opto-electronics: black and opaque epoxy for adhesive and sealing applications while blocking IR and VIS light.
- In some cases, it is advantageous to pre-warm the epoxy < 50°C in order to decrease its thixotropic nature, while increasing capillary and flow rate.
- Low CTE makes it ideal for keeping stresses to a minimum.

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:* Black **Part B:** Tan	**Die Shear Strength @ 23°C:** ≥ 10 Kg / 3,400 psi
***Consistency:** Smooth paste	**Degradation Temp. (TGA):** 438°C
***Viscosity (@ 50 RPM/23°C):** 5,000 – 7,000 cPs	**Weight Loss:**
Thixotropic Index: 2.5	**@ 200°C:** 0.19%
***Glass Transition Temp.(Tg):** ≥ 90°C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)	**@ 250°C:** 0.34%
	@ 300°C: 0.48%
Coefficient of Thermal Expansion (CTE):	**Operating Temp:**
Below Tg: 30 x 10^{-6} in/in/°C	**Continuous:** - 55°C to 250°C
Above Tg: 76 x 10^{-6} in/in/°C	**Intermittent:** - 55°C to 350°C
Shore D Hardness: 86	**Storage Modulus @ 23°C:** 598,884 psi
Lap Shear Strength @ 23°C: 2,000 psi	***Particle Size:** ≤ 50 Microns
Optical Properties @ 23°C:	
Index of Refraction @ 23°C: N/A	**Spectral Transmission @ 23°C:** < 0.01% @ 400 nm; < 1% @ 900 nm; < 5% @ 2000 nm
Electrical & Thermal Properties:	
Thermal Conductivity: 0.43 W/mK	**Volume Resistivity @ 23°C:** ≥ 3 x 10^{12} Ohm-cm
Dielectric Constant (1KHz): 3.39	**Dissipation Factor (1KHz):** 0.006

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