EPOXY TECHNOLOGY

EPO-TEK® TZ101
Technical Data Sheet
For Reference Only
Thermally Conductive Epoxy

Number of Components:	Single	Minimum Bond Line Cure Schedule*:	
Mix Ratio By Weight:	N/A	150°C	1 Hour
Specific Gravity:	1.37		
Pot Life:	28 Days		
Shelf Life:	One year at -40°C		

*Note: Container(s) should be kept closed when not in use. For filled systems, mix contents of each container (A & B) thoroughly before mixing the two together. *Please see Applications Note available on our website.*

Product Description:

EPO-TEK® TZ101 is a single component, electrically insulating, thermally conductive epoxy adhesive designed for heat-sinking of semiconductors, hybrids, electronics, and optics. Also available in a frozen syringe.

EPO-TEK® TZ101 Advantages & Application Notes:

- Suggested Applications:
  - Electronics:
    - Bonding to Kapton flex PCB circuits.
    - Adhesive for LCP packaging.
  - Semiconductor:
    - large IC die attach > 500 mil x 500 mil Si chips.
    - Can be used as an underfill for flip chip mounted ICs, BGAs, and SMDs.
  - Opto-electronics:
    - Heat sinking laser diode chips in ceramic, hybrid or TO-can packaging.
    - Bonding to thermally enhanced substrates such as aluminum nitride, Cu/W or Cu-plated BeO..
    - White color after cure makes it attractive for LED, opto-coupler and x-ray scintillator circuits.
- Excellent damp heat resistance, via 85°C/85%RH.
- Excellent combination of stress relief and robustness.

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:** White	**Weight Loss:**
***Consistency:** Smooth thixotropic paste	**@ 200°C:** 0.40%
***Viscosity (@ 10 RPM/23°C):** 24,000 – 30,000 cPs	**@ 250°C:** 0.90%
Thixotropic Index: 3.7	**@ 300°C:** 1.86%
***Glass Transition Temp.(Tg):** ≥ 40°C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -40—200°C @ 20°C/Min)	**Operating Temp:**
	Continuous: - 55°C to 175°C
Coefficient of Thermal Expansion (CTE):	**Intermittent:** - 55°C to 275°C
Below Tg: 32 x 10^{-6} in/in/°C	**Storage Modulus @ 23°C:** 513,778 psi
Above Tg: 173 x 10^{-6} in/in/°C	**Ions:** Cl^- 240 ppm
Shore D Hardness: 84	Na^+ 188 ppm
Lap Shear Strength @ 23°C: 1,726 psi	NH_4^+ 19 ppm
Die Shear Strength @ 23°C: ≥ 10 Kg / 3,400 psi	K^+ 8 ppm
Degradation Temp. (TGA): 355°C	***Particle Size:** ≤ 20 Microns
Thermal Properties:	
Thermal Conductivity: 0.93 W/mK	
Electrical Properties:	
Dielectric Constant (1KHz): 3.80	**Volume Resistivity @ 23°C:** ≥ 2 x 10^{13} Ohm-cm
Dissipation Factor (1KHz): 0.004	

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