EPO-TEK® TD1001

Technical Data Sheet

For Reference Only

Thermally Conductive Epoxy

Number of Components:	Single	Minimum Bond Line Cure Schedule*:	
Mix Ratio By Weight:	N/A	125°C	1 Hour
Specific Gravity:	1.20		
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® TD1001 is a single component, thermally conductive, electrically insulating epoxy designed for low stress semiconductor and electronics packaging.

EPO-TEK® TD1001 Advantages & Application Notes:

- Low Tg, several weeks of pot-life and low modulus are a few of its traits.
- It is particularly suitable for bonding ferrite cores in power device plastic packaging.
- Excellent adhesion to PCBs, ceramics, most metals and lead frames.
- Suggested Applications:
  - Semiconductor:
    - IC packaging on lead frame or FR4 PCB, accepting Epoxy Molding Compound plastic SMD encapsulation.
    - Low stress on large die attach > 500 mil x 500 mil.
  - Electronics:
    - Bonding Cu and Al heat sinks.
    - Staking SMDs to PCBs and other substrates.
  - Optics:
    - LED die attach.
    - White color after cure is attractive for LED, x-ray scintillator, and opto-coupler circuits.
    - Heat sinking laser diode packages.
    - Fiber optic component packaging and assembly.
- Its smooth and creamy viscosity enables high speed dispensing processes; however, its thixotropic nature allows for screen printing techniques as well.

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: varies as required; * denotes test on lot acceptance basis)***

Physical Properties:	
***Color:** White	**Die Shear Strength @ 23°C:** ≥ 15 Kg / 5,100 psi
***Consistency:** Smooth paste	**Degradation Temp. (TGA):** 436°C
***Viscosity (@ 5 RPM/23°C):** 10,000 – 22,000 cPs	**Weight Loss:**
Thixotropic Index: 4.1	**@ 200°C:** < 0.05%
***Glass Transition Temp.(Tg):** ≥ 40°C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)	**@ 250°C:** 0.14%
	@ 300°C: 0.44%
Coefficient of Thermal Expansion (CTE):	**Operating Temp:**
Below Tg: 57 x 10^{-6} in/in/°C	**Continuous:** - 55°C to 225°C
Above Tg: 213 x 10^{-6} in/in/°C	**Intermittent:** - 55°C to 325°C
Shore D Hardness: 85	**Storage Modulus @ 23°C:** 286,739 psi
Lap Shear Strength @ 23°C: > 2,000 psi	***Particle Size:** ≤ 20 Microns
Thermal Properties:	
Thermal Conductivity: 0.77 W/mK	
Electrical Properties:	
Dielectric Constant (1KHz): 3.12	**Volume Resistivity @ 23°C:** ≥ 2 x 10^{13} Ohm-cm
Dissipation Factor (1KHz): 0.010	

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