

# **EPO-TEK® T7110**

1 Hour

## **Technical Data Sheet**

For Reference Only

Thermally Conductive, Room-Temperature Cure Epoxy

Number of Components: Two Minimum Bond Line Cure Schedule\*:

Mix Ratio By Weight: 10:1 150°C 15 Minutes

100°C Specific Gravity:

80°C Part A 2.28 2 Hours Part B 0.92 23°C 3 Days

Pot Life: 3.5 Hours

Shelf Life: One year at room temperature

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

#### **Product Description:**

EPO-TEK T7110 is a two component, thermally conductive, electrically insulating epoxy designed for heat sinking electronics and semiconductors. It may be used as an adhesive, potting, or encapsulation material, for industries such as consumer, medical or optics.

### EPO-TEK® T7110 Advantages and Application Notes;

- Low viscosity allows for bubble-free potting and encapsulation.
- Room temperature or low temperature cure (< 100°C) permits use in temperature sensitive devices.
- Suggested Applications:
  - Semiconductor: capillary flow underfill for flip chip mounted die; possible glob top "fill" encapsulant.
  - Electronics: heat sinking; thermally conductive potting and general protection of PCB and SMDs; potting thermistors into cavities; potting and protection of resistor coils or Peltier devices.
  - Hybrids: potting power modules found in electronics such as cockpit, aerospace and Rf/Microwave devices.
  - Optical: encapsulation around copper coils found in nuclear, x-ray, and magnetic imaging; heat sinking outdoor LCD / touch panels exposed to sunlight.
- Low exothermic chemistry during polymerization. This allows up to one liter to be cast or potted in volumes. Contact techserv@epotek.com for the best cure schedule and sample preparation.

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: 80°C/2 hours; \* denotes test on lot acceptance basis)

**Physical Properties:** 

\*Color: Part A: Grev Part B: Clear/Colorless Die Shear Strength @ 23°C: ≥ 10 Kg / 3.400 psi

\*Consistency: Pourable paste Degradation Temp. (TGA): 314°C

\*Viscosity (@ 100 RPM/23°C): 1,400 - 2,200cPs Weight Loss: Thixotropic Index: 2.2 @ 200°C: 0.40%

\*Glass Transition Temp.(Tg): ≥ 40°C (Dynamic Cure @ 250°C: 0.66% 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min) @ 300°C: 1.78%

**Coefficient of Thermal Expansion (CTE): Operating Temp: Below Tg:**  $31 \times 10^{-6} \text{ in/in/}^{\circ}\text{C}$ Continuous: - 55°C to 150°C

**Above Tg:** 142 x 10<sup>-6</sup> in/in/°C Intermittent: - 55°C to 250°C Shore D Hardness: 91 Storage Modulus @ 23°C: 789,250psi

Lap Shear Strength @ 23°C: > 1,932 psi \*Particle Size: ≤ 50 Microns

**Thermal Properties:** Thermal Conductivity: 1.0 W/mK

**Electrical Properties:** 

Volume Resistivity @ 23°C: ≥ 2 x 10<sup>13</sup> Ohm-cm Dielectric Constant (1KHz): 5.69

Dissipation Factor (1KHz): 0.009

#### **EPOXY TECHNOLOGY, INC.**

14 Fortune Drive, Billerica, MA 01821-3972 Phone: 978.667.3805 Fax: 978.663.9782 www.EPOTEK.com

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