

EPO-TEK[®] **H77T** Technical Data Sheet

For Reference Only

Thermally Conductive Epoxy

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

Mix Ratio By Weight: 100:15 150°C 1 Hour

Specific Gravity:

 Part A
 2.69

 Part B
 1.22

 Pot Life:
 8 Hours

Shelf Life: One year at room temperature

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® H77T is a two component, thermally conductive, electrically insulating epoxy designed for lid-sealing of hybrids found in hermetic packaging of micro-electronics. Lids can be ceramic, glass, aluminum or kovar. Package types can be plastic, metal cases or ceramic.

EPO-TEK® H77T Advantages & Application Notes:

- High temperature epoxy. Coatings on metals have been subjected to temperatures as high as 260°C without bond failure; can also resist >300°C processes found in ceramic or hermetic packaging.
- Rheology yields a thixotropic paste intended for dispensing and printing applications.
- Available in lower viscosity for better flow properties. Contact <u>techserv@epotek.com</u> for your best match.
- Excellent solvent and chemical resistance ideal for harsh environments found in aircraft, under-hood automotive, medical, and petrochemical refineries such as down-hole applications.
- Can provide near hermetic seals in the packaging of MEMs devices, like pressure sensors or accelerometers, packaged in TO-cans.
- Suggested for ultra-high vacuum applications.
- It can also be used for sealing of optical filter windows found in scientific OEM or sensor devices.

<u>Typical Properties</u>: (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: Grey Part B: Amber Die Shear Strength @ 23°C: ≥ 5 Kg /1,700 psi

*Consistency: Paste Degradation Temp. (TGA): 413°C

Viscosity (@ 10 RPM/23°C): 23,000 – 34,000 cPs Weight Loss:

 Thixotropic Index: 3.0
 @ 200°C: < 0.05%</td>

 *Glass Transition Temp.(Tg): ≥ 80°C (Dynamic Cure
 @ 250°C: 0.08%

 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)
 @ 300°C: 0.22%

Coefficient of Thermal Expansion (CTE): Operating Temp:

 Below Tg:
 34 x 10⁻⁶ in/in/°C
 Continuous:
 - 55°C to 260°C

 Above Tg:
 127 x 10⁻⁶ in/in/°C
 Intermittent:
 - 55°C to 360°C

 Shore D Hardness:
 89
 Storage Modulus @ 23°C:
 782,724 psi

Lap Shear Strength @ 23°C: 1,215 psi *Particle Size: ≤ 50 Microns

Thermal Properties:

Thermal Conductivity: 1.1 W/mK

Electrical Properties:

Dielectric Constant (1KHz): 5.40 Volume Resistivity @ 23°C: ≥ 2 x 10¹³Ohm-cm

Dissipation Factor (1KHz): 0.004

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