

Number of Components:	Two	Minimum Bond Line Cure Schedule*:	
Mix Ratio By Weight:	10:1	150°C	5 Minutes
Specific Gravity:		120°C	15 Minutes
Part A	2.45	80°C	90 Minutes
Part B	2.14		
Pot Life:	15 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[®] H21D is a two component, high Tg, silver-filled epoxy adhesive designed for chip bonding in microelectronic and optoelectronic applications.

EPO-TEK[®] H21D Advantages & Application Notes:

- Extended pot-life and can be cured at relatively low temperatures such as 80°C.
- Designed to be used in the 300°C range for applications such as wire bonding operations and eutectic lid-sealing processes.
- "Contains no solvents or thinners. Passes NASA low outgassing standard ASTM E595 with proper cure - <http://outgassing.nasa.gov/>
- Also suggested for hybrid - aerospace circuits found in Rf / Microwave devices like cockpits and satellites.
- Paste-like rheology allows for application by commercial dispensing equipment, stamping, screen printing, or by hand with spatula or toothpick.
- Compatible with Au-plated ceramic substrates found in traditional and custom hybrids.

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: Silver Part B: Silver	Weight Loss:
*Consistency: Smooth paste	@ 200°C: 0.20%
*Viscosity (@ 20 RPM/23°C): 14,000 – 20,400 cPs	@ 250°C: 0.21%
Thixotropic Index: 2.62	@ 300°C: 0.35%
*Glass Transition Temp.(Tg): ≥ 100°C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)	Operating Temp:
Coefficient of Thermal Expansion (CTE):	Continuous: - 55°C to 250°C
Below Tg: 26 x 10 ⁻⁶ in/in/°C	Intermittent: - 55°C to 350°C
Above Tg: 124 x 10 ⁻⁶ in/in/°C	Storage Modulus @ 23°C: 712,559 psi
Shore D Hardness: 60	Ions: Cl ⁻ 64 ppm
Lap Shear Strength @ 23°C: 1504 psi	Na ⁺ 72 ppm
Die Shear Strength @ 23°C: ≥ 5 Kg / 1,700 psi	NH ₄ ⁺ 121 ppm
Degradation Temp. (TGA): 457°C	K ⁺
	*Particle Size: ≤ 45 Microns
Electrical Properties:	
*Volume Resistivity @ 23°C: ≤ 0.0009 Ohm-cm	
Thermal Properties:	
Thermal Conductivity: 1.0 W/mK	

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