EPOXY TECHNOLOGY

EPO-TEK® H20S-P

Technical Data Sheet

For Reference Only

Electrically Conductive, Silver Epoxy for Die Stamping

Number of Components:	Two	Minimum Bond Line Cure Schedule*:	
Mix Ratio By Weight:	1:1	175°C	45 Seconds
Specific Gravity:		150°C	5 Minutes
Part A	1.74	120°C	15 Minutes
Part B	3.07	100°C	45 Minutes
Pot Life:	3 Days	80°C	4 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® H20S-P is a version of EPO-TEK® H20S, semiconductor die-attach epoxy. It was designed for improved electrical conductivity using a low temperature cure such as 80°C/4 hours. In addition to the high electrical conductivity, the short curing cycles, the proven reliability, and the convenient mix ratio, EPO-TEK® H20S-P is extremely simple to use.

EPO-TEK® H20S-P Advantages & Application Notes:

- Especially recommended for use in high speed epoxy chip bonding systems where fast cures are highly desirable.
- Suggested for JEDEC Level III and II plastic IC packaging.
- The low temperature cure makes it ideal for flex circuitry and other low stress applications.
- It is used extensively for bonding quartz crystal oscillators and other stress sensitive chips.
- Used for die and SMD bonding inside hybrid/hermetic packages such as DIP and TO-Cans; also EMI/RF shielding of micro-electronics.
- Ideal for making ITO electrical contacts in LCD packaging.

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 thixotropic paste	**@ 200°C:** 0.66%
***Viscosity (@ 100 RPM/23°C):** 2,200 – 2,700 cPs	**@ 250°C:** 1.17%
Thixotropic Index: 2.8 – 3.1	**@ 300°C:** 1.99%
***Glass Transition Temp.(Tg):** ≥ 80°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 200°C
Below Tg: 31×10^{-6} in/in/°C	**Intermittent:** -55°C to 300°C
Above Tg: 120×10^{-6} in/in/°C	**Storage Modulus @ 23°C:** 339,720 psi
Shore D Hardness: 61	**Ions:** Cl^- 162 ppm
Lap Shear Strength @ 23°C: 1,240 psi	Na^+ 0 ppm
Die Shear Strength @ 23°C: ≥ 5 Kg/ 1,700 psi	NH_4^+ 282 ppm
Degradation Temp. (TGA): 429°C	K^+ 4 ppm
	***Particle Size:** ≤ 20 Microns
Electrical Properties:	
***Volume Resistivity @ 23°C:** ≤ 0.0005 Ohm-cm	***Volume Resistivity @ 23°C (80°C/4 Hour cure):** ≤ 0.001 Ohm-cm
Thermal Properties:	
Thermal Conductivity: 3.25 W/mK	

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