

Number of Components:	Single	Minimum Bond Line Cure Schedule*:
Mix Ratio By Weight:	N/A	Pre-Bake      30 Min @ 80°C (max)
Specific Gravity:	2.44	Cure            1 Hour @ 150°C
Part A		(with or without vacuum)
Part B		Post-Cure     90 Min @ 285°C
Pot Life: N/A	Dry Time: 7 Days	
Shelf Life:	One year refrigerated	

Note: Container(s) should be kept closed when not in use. For filled systems, mix contents of container thoroughly.

\*Please see Applications Note available on our website.

### Product Description:

EPO-TEK<sup>®</sup> P1011S is a single component, modified polyimide, high temperature grade, silver-filled electrically and thermally conductive adhesive designed for semiconductor die-attach and hybrid microelectronic packaging.

### EPO-TEK<sup>®</sup> P-1011S Advantages & Applications Notes:

- It is a lower viscosity version of EPO-TEK<sup>®</sup> P1011 for improved die-stamping or pin transfer process methods
- Suggested applications in hybrid micro-electronics:
  - Resisting ceramic or metal SMD lid sealing processes >300°C.
  - Die attaching quartz crystal oscillators to the Au post of TO-cans or Au/ pads on ceramic PCBs.
  - Down-hole petrochemical circuits
  - Atomic clocks, microwave or millimeter wave circuits
  - Die-attaching LED and EEPROM chips inside alpha numeric displays, resisting glass lid-sealing processes >300°C.
- A two-step cure is suggested for optimal adhesive properties.
- Available in alternative viscosities. Contact [techserv@epotek.com](mailto:techserv@epotek.com) for your best recommendation.

**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: Silver	Weight Loss:
*Consistency: Smooth slightly thixotropic paste	@ 200°C: 0.08%
*Viscosity (@ 20 RPM/23°C): 6,500 – 10,500 cPs	@ 250°C: 0.09%
Thixotropic Index: 1.8	@ 300°C: 0.16%
*Glass Transition Temp.(Tg): ≥ 100°C (Ramp 40°C/Min to 300°C)	Operating Temp:
Coefficient of Thermal Expansion (CTE):	Continuous: - 55°C to +225°C
Below Tg: 28 x 10 <sup>-6</sup> in/in/°C	Intermittent: - 55°C to +325°C
Above Tg: 57 x 10 <sup>-6</sup> in/in/°C	Storage Modulus @ 23°C: 639,262
Shore D Hardness: 71	Ions: Cl <sup>-</sup> ppm
Lap Shear Strength @ 23°C: N/A	Na <sup>+</sup> ppm
Die Shear Strength @ 23°C: ≥ 4 Kg / 1,360 psi	NH <sub>4</sub> <sup>+</sup> ppm
Degradation Temp. (TGA): 379°C	K <sup>+</sup> ppm
	*Particle Size: ≤ 20 Microns
Electrical Properties:	
*Volume Resistivity @ 23°C: ≤ 0.0005 Ohm-cm	
Thermal Properties:	
Thermal Conductivity: > 2.78 W/mK	

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