

Date: September 2017
Rev: IV
No. of Components: Single
Mix Ratio by Weight: N/A
Specific Gravity: 2.39
Pot Life: N/A **Dry Time:** 7 Days
Shelf Life- Bulk: One year at room temperature

Recommended Cure:
Pre-Bake: 30 Minutes @ 80°C (max)
Cure: 1 Hour @ 150°C (with or without vacuum)
Post-cure: 90 Minutes @ 285°C

NOTES:

- Container(s) should be kept closed when not in use.
- Filled systems should be stirred thoroughly before mixing and prior to use.
- Performance properties (rheology, conductivity, others) of the product may vary from those stated on the data sheet when bi-pak/syringe packaging or post-processing of any kind is performed. Epoxy's warranties shall not apply to any products that have been reprocessed or repackaged from Epoxy's delivered status/container into any other containers of any kind, including but not limited to syringes, bi-paks, cartridges, pouches, tubes, capsules, films or other packages.

Product Description: EPO-TEK® P1011 is a single component, modified polyimide, silver-filled adhesive designed for chip bonding in microelectronic and optoelectronic applications.

Typical Properties: Cure condition: Varies as required Different batches, conditions & applications yield differing results.
 Data below is not guaranteed. To be used as a guide only, not as a specification. * denotes test on lot acceptance basis

PHYSICAL PROPERTIES:			
* Color (before cure):	Silver		
* Consistency:	Smooth slightly thixotropic paste		
* Viscosity (23°C) @ 20 rpm:	8,000 - 12,000 cPs		
Thixotropic Index:	1.9		
* Glass Transition Temp:	≥ 100 °C (Ramp 40°C/Min to 300°C)		
Coefficient of Thermal Expansion (CTE):			
Below Tg:	32	x 10 ⁻⁶ in/in°C	
Above Tg:	225	x 10 ⁻⁶ in/in°C	
Shore D Hardness:	61		
Lap Shear @ 23°C:	N/A		
Die Shear @ 23°C:	≥ 5	Kg	1,778 psi
Degradation Temp:	389 °C		
Weight Loss:			
@ 200°C:	0.06	%	
@ 250°C:	0.08	%	
@ 300°C:	0.15	%	
Suggested Operating Temperature:	< 325 °C (Intermittent)		
Storage Modulus:	Upon request		
Ion Content:	Cl:	114 ppm	Na ⁺ : 39 ppm
	NH ₄ ⁺ :	27 ppm	K ⁺ : 18 ppm
* Particle Size:	≤ 20 microns		

ELECTRICAL AND THERMAL PROPERTIES:			
Thermal Conductivity:	> 2.7	W/mK	
* Volume Resistivity @ 23°C:	≤ 0.0005	Ohm-cm	
Dielectric Constant (1KHz):	N/A		
Dissipation Factor (1KHz):	N/A		

Epoxyes and Adhesives for Demanding Applications™

This information is based on data and tests believed to be accurate. Epoxy Technology, Inc. makes no warranties (expressed or implied) as to its accuracy and assumes no liability in connection with any use of this product.

EPOXY TECHNOLOGY, INC.

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www.epotek.com

EPO-TEK® P1011 Advantages & Suggested Application Notes:

- Low stress die-attach adhesive that is very effective for bonding quartz crystal oscillators used in Rf / Microwave wireless devices.
- Designed specifically for screen printing and machine dispensing applications. A lower viscosity version, called P1011S is available for die-stamping processes.
- Recommended for screen printing applications; long dry time.
- Good electrical and thermal conductivity.
- Suggested for ceramic and DIP packaging of hybrids, as well as TO-Cans.

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