EPO-TEK® P1011

Technical Data Sheet
For Reference Only
Electrically Conductive Modified Polyimide

Date:	June 2020
Rev:	VI
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:	Not detected		
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	

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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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