EPOXY TECHNOLOGY

EPO-TEK® P1011S

Technical Data Sheet
For Reference Only
Electrically Conductive Modified Polyimide

Date:	June 2020
Rev:	VII
No. of Components:	Single
Mix Ratio by Weight:	N/A
Specific Gravity:	2.44
Pot Life:	N/A **Dry Time:** 7 Days
Shelf Life- Bulk:	One year refrigerated

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® 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.

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:	6,500 - 10,500	cPs	
Thixotropic Index:	1.8		
Glass Transition Temp:	Not detected		
Coefficient of Thermal Expansion (CTE):			
Below Tg:	28	x 10^{-6} in/in°C	
Above Tg:	57	x 10^{-6} in/in°C	
Shore D Hardness:	71		
Lap Shear @ 23°C:	N/A		
Die Shear @ 23°C:	≥ 4	Kg	1,422 psi
Degradation Temp:	379	°C	
Weight Loss:			
@ 200°C:	0.08	%	
@ 250°C:	0.09	%	
@ 300°C:	0.16	%	
Suggested Operating Temperature:	< 325	°C (Intermittent)	
Storage Modulus:	639,262	psi	
* Particle Size:	≤ 20	microns	

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	> 2.8	W/mK
* Volume Resistivity @ 23°C:	≤ 0.0005	Ohm-cm
Dielectric Constant (1KHz):	N/A	
Dissipation Factor (1KHz):	N/A	

Epoxies 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.
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EPO-TEK® P1011S Advantages & Suggested Application Notes:

- It is a lower viscosity version of EPO-TEK® 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 for your best recommendation.

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.
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