EPO-TEK® TV1003

Technical Data Sheet
For Reference Only
Thermally Conductive Polyimide

Date: July 2019
Rev: VI
No. of Components: Single
Mix Ratio by Weight: N/A
Specific Gravity: 1.24
Pot Life: N/A **Dry Time:** 28 Days
Shelf Life- Bulk: One year at room temperature
Shelf Life- Syringe: Six months at -40°C

Recommended Cure: 150°C / 1 Hour + 275°C / 1 Hour

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® TV1003 is a single component, screen printable polyimide adhesive designed for semiconductor wafer passivation applications. It is a more insulating alternative to EPO-TEK® TV1002.

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):	Ivory		
* Consistency:	Smooth paste		
* Viscosity (23°C) @ 0.5 rpm:	325,000-525,000	cPs	
Thixotropic Index:	1.4	(between 0.5 & 1 rpm)	
* Glass Transition Temp:	≥ 200	°C (Cure: 150°C / 1 Hour + 275°C / 1 Hour; Ramp 20°C/Min to 350°C)	
Coefficient of Thermal Expansion (CTE):			
Below Tg:	28	x 10^{-6} in/in°C	
Above Tg:	36	x 10^{-6} in/in°C	
Shore D Hardness:	60		
Lap Shear @ 23°C:	N/A		
Die Shear @ 23°C:	≥ 1.4	Kg 498 psi	
Degradation Temp:	541	°C	
Weight Loss:			
@ 200°C:	< 0.05	%	
@ 250°C:	< 0.05	%	
@ 300°C:	< 0.05	%	
Suggested Operating Temperature:	< 400	°C (Intermittent)	
Storage Modulus:	284,925	psi	
Ion Content:	Cl^-: 3 ppm	Na^+: 15 ppm	
	NH_4^+: 96 ppm	K^+: 0.5 ppm	
* Particle Size:	≤ 10	microns	

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	0.8	W/mK

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EPO-TEK® TV1003 Advantages & Suggested Application Notes:

- High temperature compatible; resists >400°C processing conditions common in back end wafer fabrication.
- Ideal for screen printing onto wafers; optical coating thicknesses in the 10-90 micron range.
- High viscosity and thixotropy allow ultra-fine print definition.
- Used for alpha particle protection.
- Low outgassing.
- High ionic cleanliness.
- Suggested applications:
  - Semiconductor Si wafer coating
  - High temp down hole coating applications.

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