EPO-TEK® 920-FL

Technical Data Sheet
For Reference Only
Thermally Conductive Epoxy

Date:	December 2017		**Recommended Cure: 150°C / 1 Hour**
Rev:	IV		
No. of Components:	Two		Minimum Alternative Cure(s):
Mix Ratio by Weight:	100 : 3		*May not achieve performance properties listed below*
Specific Gravity:	Part A: 2.52	Part B: 1.02	150°C / 5 Minutes
Pot Life:	7 Hours		120°C / 10 Minutes
Shelf Life- Bulk:	One year at room temperature		100°C / 20 Minutes

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.
- Syringe packaging will impact initial viscosity and effective pot life, potentially beyond stated parameters.

Product Description: EPO-TEK® 920-FL is a two component, high Tg, electrically insulating, thermally conductive epoxy designed for thermal management applications found in semiconductor, hybrid microelectronics, PCB, and optical industries. It is a low viscosity version of EPO-TEK® 920.

Typical Properties: Cure condition: 150°C / 1 Hour 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):	Part A: Grey	Part B: Amber
* Consistency:	Smooth flowing paste	
* Viscosity (23°C) @ 20 rpm:	8,000-12,000	cPs
Thixotropic Index:	3.1	
* Glass Transition Temp:	≥ 90	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):		
Below Tg:	21	x 10^{-6} in/in°C
Above Tg:	97	x 10^{-6} in/in°C
Shore D Hardness:	93	
Lap Shear @ 23°C:	> 2,000	psi
Die Shear @ 23°C:	≥ 20	Kg 7,112 psi
Degradation Temp:	362	°C
Weight Loss:		
@ 200°C:	0.20	%
@ 250°C:	0.28	%
@ 300°C:	0.48	%
Suggested Operating Temperature:	< 300	°C (Intermittent)
Storage Modulus:	783,073	psi
* Particle Size:	≤ 50	microns

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	0.9	W/mK
Volume Resistivity @ 23°C:	≥ 4 x 10^{13}	Ohm-cm
Dielectric Constant (1KHz):	5.96	
Dissipation Factor (1KHz):	0.009	

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EPO-TEK® 920-FL Advantages & Suggested Application Notes:

- Can be an adhesive for mounting heat sinks and substrates, a seal for many types of packages, or a thermal potting compound.
- Rheology allows for a smooth free flowing paste, which allows ease of use for potting and casting applications, as well as syringe dispensing.
- Built-in color change from tan to an amber color.
- Suggested Applications:
    - Hybrids: thermal potting compound; potting connectors and potting transformers, mounting heat sinks to SMDs and ceramic circuits; potting, glob top protection over SMDs.
    - PCB Level: heat sinking adhesive; adhesion to Au, Cu, Al, FR4, many plastics, components and connectors.
    - Semiconductor: thermal management as semiconductor underfill or glob top encapsulant; potting IC packages like BGAs or CSPs.
- Available in many intermediate viscosity ranges. Contact techserv@epotek.com for your best recommendation.
- Low temperature curing < 120°C.

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