

Date: September 2017
Rev: VII
No. of Components: Two
Mix Ratio by Weight: 100 : 68
Specific Gravity: Part A: 1.16 Part B: 1.01
Pot Life: 20 Minutes
Shelf Life- Bulk: One year at room temperature

Recommended Cure: 60°C / 2 Hours

Minimum Alternative Cure(s):
May not achieve performance properties listed below
 23°C / 24 Hours

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.
- **TOTAL MASS SHOULD NOT EXCEED 25 GRAMS**

Product Description: EPO-TEK® 509FM-1 is a two component, optically opaque epoxy designed for potting of semiconductors, PCB and systems-level electronics. It can be used in many electronic industries such as consumer, military, medical and optical/OEM.

Typical Properties: Cure condition: 60°C / 2 Hours 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: Black	Part B: Amber	
* Consistency:	Pourable liquid		
* Viscosity (23°C) @ 100 rpm:	400 - 1,000	cPs	
Thixotropic Index:	N/A		
* Glass Transition Temp:	≥ 40	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
	Below Tg:	55	x 10 ⁻⁶ in/in°C
	Above Tg:	191	x 10 ⁻⁶ in/in°C
Shore D Hardness:	85		
Lap Shear @ 23°C:	1,704	psi	
Die Shear @ 23°C:	≥ 10	Kg	3,556 psi
Degradation Temp:	365	°C	
Weight Loss:			
	@ 200°C:	0.29	%
	@ 250°C:	1.14	%
	@ 300°C:	3.47	%
Suggested Operating Temperature:	< 300	°C (Intermittent)	
Storage Modulus:	327,932	psi	
* Particle Size:	N/A		

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	N/A	
Volume Resistivity @ 23°C:	≥ 3 x 10 ¹³	Ohm-cm
Dielectric Constant (1KHz):	3.65	
Dissipation Factor (1KHz):	0.007	

OPTICAL PROPERTIES @ 23°C:		
Spectral Transmission:	< 5 % @ 400-2500	nm
Refractive Index:	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® 509FM-1 Advantages & Suggested Application Notes:

- Low viscosity resin allows for ease of pouring and potting into cavities with minimal void formation.
- Special care should be used when mixing large masses. Contact techserv@epotek.com for advice on mixing and potting procedures
- Opaque black while maintaining its high insulation properties.
- Also available in a thixotropic version called EPO-TEK® 509EBT-M1. Contact techserv@epotek.com to determine which is best option for given application
- Compatible with dispensing, pouring and spin coating applications
- Suggested Applications:
 - Optics: cutting of IR and VIS light in range of 300 to 2000 nm.
 - Electronics; potting cables and wires into connectors, electrically isolating pins of connectors.
 - Semiconductor: a glob top over IC's using the COB packaging format.

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