

EPO-TEK® 509FM-1

Epoxy; Epoxide

Epoxy Technology Inc.

Message:

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.

General Information			
Features	General Purpose Low Viscosity		
Uses	Consumer Applications Electrical/Electronic Applications General Purpose Medical/Healthcare Applications Military Applications Optical Applications		
Agency Ratings	EC 1907/2006 (REACH) EU 2003/11/EC EU 2006/122/EC		
RoHS Compliance	RoHS Compliant		
Forms	Liquid		
Processing Method	Potting		
Thermal	Nominal Value	Unit	
Glass Transition Temperature ¹	> 40.0	°C	
CLTE - Flow			
-- ²	5.5E-5	cm/cm/°C	
-- ³	1.9E-4	cm/cm/°C	
Optical	Nominal Value	Unit	
Transmittance (400 to 2500 nm)	< 5.0	%	
Thermoset	Nominal Value	Unit	Test Method
Thermoset Components			
Part A	Mix Ratio by Weight: 100		
Part B	Mix Ratio by Weight: 68		
Shelf Life (23°C)	52	wk	
Additional Information	Nominal Value	Unit	Test Method
Degradation Temperature	365	°C	TGA
Die Shear Strength - > 10 kg (23°C)	23.4	MPa	

Operating Temperature		
Continuous	-55 to 200	°C
Intermittent	-55 to 300	°C
Storage Modulus (23°C)	2.26	GPa
Weight Loss on Heating		
200°C	0.29	%
250°C	1.1	%
300°C	3.5	%

Uncured Properties	Nominal Value	Unit	Test Method
Color			
-- 4	Amber		
-- 5	Black		
Density			
Part B	1.01	g/cm ³	
Part A	1.16	g/cm ³	
Viscosity ⁶ (23°C)	0.40 to 1.0	Pa·s	
Curing Time (60°C)	2.0	hr	
Pot Life	20	min	

Cured Properties	Nominal Value	Unit	Test Method
Shore Hardness (Shore D)	85		
Lap Shear Strength (23°C)	11.7	MPa	
Relative Permittivity (1 kHz)	3.65		
Volume Resistivity (23°C)	> 3.0E+13	ohms·cm	
Dissipation Factor (1 kHz)	7.0E-3		

NOTE	
1.	Dynamic Cure 20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min
2.	Below Tg
3.	Above Tg
4.	Part B
5.	Part A
6.	100 rpm

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