

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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