

LINQSOL EMC-9131

Black epoxy molding compound



- Minimum warpage
- Excellent wire sweep for fine-pitch
- High reliability (MSL 2 capable)

LINQSOL EMC-9131 is a high-performance, eco-friendly epoxy molding compound engineered specifically for BGA and CSP encapsulation. Designed to minimize warpage, **EMC-9131** features an ultra-low modulus and optimized linear shrinkage, ensuring reliable package integrity. Its exceptional fluidity reduces wire sweep, even for fine-pitch packages and ultra-thin bonding wires. **EMC-9131** also demonstrates outstanding adhesion to both PCB substrates and silicone chips, performing reliably in rigorous tests up to MSL2 @260°C.

This versatile compound is compatible with a range of BGA, CSP, and QFN package types, including PBGA, LGA, FBGA, CABGA, CTBGA, FCBGA, FC-CSP, QFN, DFN, and more.

Cured properties

Property	Value	Unit
General Properties		
Color	Black	–
Filler content	89	%
Filler sieved size	53	µm
Filler type	Spherical	–
Specific gravity	2.01	–
Spiral flow at 175 °C	139.7	cm
Chemical Properties		
Ion content		
Chloride (Cl ⁻) concentration	13.5	ppm
Sodium (Na ⁺) concentration	3	ppm
pH	5.5	–
Moisture absorption (PCT, 72 hours)	0.15	%
Mechanical Properties		
Flexural strength at 25 °C	160	MPa
Flexural modulus at 25 °C	26	GPa
Hot hardness (175 °C, 120 sec)	82	Shore D
Electrical Properties		
Volume Resistivity	8×10 ¹⁴	Ω•cm
Dielectric Constant (1 MHz)	4.5	–
Dissipation Factor (1 MHz)	0.2	%

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Thermal Properties

Glass transition temperature	130	°C
Coefficient of thermal expansion, α_1	8	ppm/K
Coefficient of thermal expansion, α_2	30	ppm/K
Gel time at 175 °C	30	s
Thermal Conductivity	0.8	W/m·K
UL-94 rating	V-0	–

The data was obtained using samples cured at 175 °C for 120 seconds and then post-mold cured at 175 °C for 5 hours.

Recommended mold parameters

Parameter	Value	Unit
Preheating time	0–6	sec
Molding temperature	175	°C
Transfer pressure	40–90	kg _f /cm ²
Transfer time	10–14	sec
Cure time at 175 °C	100–150	sec
Post mold cure time at 175 °C	4–6	h

Processing Instructions

- Before use, allow **LINQSOL EMC-9131** to reach room temperature for a minimum of 20~30 hours, ensuring the bag remains unopened to prevent moisture contamination. Cumulative time of thawing and using should not exceed 48 hours.
- Prior to molding with **EMC-9131** or any new material, the mold should be cleaned thoroughly. For proper mold conditioning, the initial three shots should be cured for 5–10 minutes. After this initial conditioning period, you can reduce the curing time to a level that provides sufficient hot hardness for effective release.

Storage and Handling

LINQSOL EMC-9131 is available in pressed pellets in a wide range of sizes to meet specific customer needs. To ensure product integrity, keep it away from oxidizing materials. For transporting the product, maintain a cold temperature not exceeding 10°C. For long-term storage, maintain a cold environment. The shelf life at 5 °C is 183 days.

Please note that the provided information is based on available data and typical conditions. For specific applications and detailed test results, refer to the actual test data and conduct appropriate certifications.

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