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LINQSOL™ EMC-9012

Black epoxy molding compound

- Green epoxy molding compound
- Designed for Ball Grid Array (BGA) and Land Grid Array (LGA) packages
- Ultra low water absorption, low stress, and excellent reliability performance

LINQSOL™ EMC-9012 is a green epoxy molding compound specifically developed for the encapsulation of Ball Grid Array (BGA) and Land Grid Array (LGA) packages. Its long spiral flow at 175 °C satisfies the moldability requirement for BGA and LGA molding. **LINQSOL™ EMC-9012** has low modulus that meets low-stress requirements. Additionally, with a UL 94 V-0 flammability rating and ultra low water absorption, **EMC-9012** guarantees excellent performance and outstanding reliability. This product is deliberately formulated without the inclusion of substances prohibited by the European Union RoHS and REACH.

Overall, **LINQSOL™ EMC-9012** seamlessly integrates advanced material properties, safety compliance, and superior performance to deliver a reliable solution for semiconductor device encapsulation.

Cured properties

Property	Unit	9012
General Properties		
Color	–	Black
Filler content	%	89
Filler cut size	µm	55
Specific gravity	–	2.01
Spiral flow *at 175 °C*	cm	165
Chemical Properties		
Ion content Chloride (Cl^-) concentration Sodium (Na^+) concentration	 ppm ppm	 7 6
Moisture absorption at boiling	%	0.12
pH of extract	–	6.0
Electrical conductivity of extract	$\mu S \cdot cm^{-1}$	31
Mechanical Properties		
Flexural strength *at 25°C*	MPa	145
Flexural modulus *at 25°C*	GPa	24
Adhesion Strength to Cu *at RT* Before MSL3 Preconditioning After MSL3 Preconditioning	 MPa MPa	 6.5 6.4

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Property	Unit	9012
Thermal Properties		
Glass transition temperature	°C	133
Coefficient of thermal expansion, α1	ppm/°C	8
Coefficient of thermal expansion, α2	ppm/°C	35
Gel time *at 175 °C*	sec	45
Flammability	UL-94	V-0

The technical data presented above is intended for reference purposes only. Actual performance may vary based on specific applications and conditions. Users are advised to conduct their own testing and evaluation to ensure compatibility with their specific requirements.

Recommended mold parameters

Property	Unit	9012
Molding temperature	°C	170–190
Transfer pressure	kg/cm^2	40–90
Transfer time	sec	7–30
Cure time *at 175 °C*	sec	90–120
Post mold cure time *at 175 °C*	h	6–12

** Above values can be used for reference. Mold parameters can vary based on actual molding process conditions.*

Processing Instructions

- Before use, let **LINQSOL™ EMC-9012** reach room temperature (23±5) for 24 hours. Keep the bag unopened and stored in a dry location with a relative humidity of ≤50% during thawing to prevent moisture contamination.
- Use the materials within 72 hours after removing the container from cold storage.

Storage and Handling

LINQSOL™ EMC-9012 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 long-term storage, maintain a cold environment. The shelf life when stored below 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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