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# LINQSOL™ EMC-9012H

## Black epoxy molding compound

- Green epoxy molding compound
- Designed for Ball Grid Array (BGA) packages and Quad Flat No Leads (QFN) Packages
- High glass transition temperature, low stress, and excellent reliability performance

**LINQSOL™ EMC-9012H** is a green epoxy molding compound specifically developed for the encapsulation of Ball Grid Array (BGA) and Quad Flat No Leads (QFN) packages. Its long spiral flow at 175 °C satisfies the moldability requirement for BGA and QFN molding.

**LINQSOL™ EMC-9012H** has high glass transition temperature designed to pass higher reliability requirements. Additionally, with a UL 94 V-0 flammability rating and ultra low water absorption, **EMC-9012H** 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-9012H** seamlessly integrates advanced material properties, safety compliance, and superior performance to deliver a reliable solution for semiconductor device encapsulation.

### Cured properties

| Property | Unit | Value |
|---|---|---|
| **General Properties** | | |
| **Color** | – | Black |
| **Filler content** | % | 87 |
| **Filler cut size** | µm | 53 |
| **Specific gravity** | – | 1.99 |
| **Spiral flow** *at 175 °C* | cm | 165 |
| **Chemical Properties** | | |
| **Ion content**<br>Chloride ($Cl^-$) concentration<br>Sodium ($Na^+$) concentration | <br>ppm<br>ppm | <br>7<br>4 |
| **Moisture absorption at boiling** | % | 0.36 |
| **pH of extract** | – | 5.5 |
| **Electrical conductivity of extract** | $\mu S \cdot cm^{-1}$ | 30 |
| **Mechanical Properties** | | |
| **Flexural strength** *(25°C/260°C)* | MPa | 170/31 |
| **Flexural modulus** *(25°C/260°C)* | GPa | 21.2/0.8 |

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| Property | Unit | Value |
|---|---|---|
| **Thermal Properties** | | |
| **Glass transition temperature** | °C | 158 |
| **Coefficient of thermal expansion, α1** | ppm/°C | 10 |
| **Coefficient of thermal expansion, α2** | ppm/°C | 40 |
| **Gel time** *at 175 °C* | sec | 40 |
| **Mold shrinkage** | % | 0.16 |
| **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 molding process

| Parameters | Unit | Value |
|---|---|---|
| **Molding temperature** | °C | 170–180 |
| **Transfer pressure** | $kg/cm^2$ | 40–90 |
| **Transfer time** | sec | 10–25 |
| **Cure time** *at 175 °C* | sec | 100–150 |
| **Post mold cure time** *at 175 °C* | h | 4–8 |

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

## Processing Instructions

- Before use, let **LINQSOL™ EMC-9012H** reach room temperature (23°C *±5*) for 16 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 24 hours after removing the container from cold storage.

## Storage and Handling

**LINQSOL™ EMC-9012H** 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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