

LINQSOL™ EMC-9023 Series



Epoxy mold underfill

- Green epoxy molding compound
- Thermally conductive molding compound
- Designed for fullpack and transistor outline (TO) packages

LINQSOL™ EMC-9023 is a series of molding underfill (MUF) products specifically developed for the encapsulation of flip chip ball grid arrays (FCBGA), flip chip chip scale packages (FCCSP), and system in packages (SiP). It has excellent flowability and low modulus that meets low-stress requirements. Additionally, with a UL 94 V-0 flammability rating and low ionic contents.

LINQSOL™ EMC-9023 guarantees good moldability and outstanding reliability performance. This product is deliberately formulated without the inclusion of substances prohibited by the European Union RoHS and REACH. Overall, **LINQSOL™ EMC-9023** seamlessly integrates advanced material properties, safety compliance, and superior performance to deliver a reliable solution for semiconductor device encapsulation.

Cured properties

Property	Unit	EMC-9023	EMC-9023K	EMC-9023E
General Properties				
Filler content	%	85	85	85
Filler sieving size	µm	20	20	20
Specific gravity	–	1.96	1.96	1.96
Spiral flow at 175°C	cm	180	165	190
Chemical Properties				
Ion content				
Chloride (Cl ⁻) concentration	ppm	7	3	7
Sodium (Na ⁺) concentration	ppm	6	5	4
Water absorption (PCT 24hr)	%	0.38	0.3	0.35
pH of extract	–	5.0	6.0	5.0
Electrical conductivity of extract	µS · cm ⁻¹	40	15	30
Mechanical Properties				
Flexural strength (25°C / 260°C)	MPa	150 / 25	145 / 23	145 / 21
Flexural modulus (25°C / 260°C)	GPa	23.6 / 11	21 / 0.9	23.6 / 9.8
Mold shrinkage	%	0.24	0.23	0.27

Caplinq Europe

Industrieweg 15E,
1566JN Assendelft
The Netherlands
Phone: +31 (20) 893 2224
Email: info@caplinq.com

Caplinq Canada

80 Sirocco Crescent
Ottawa ON, K2S 2C9
Canada
Phone: +1 (613) 482-2215
Email: info@caplinq.com



Caplinq North America

36927 Schoolcraft Rd
Livonia, MI 48150
United states
Phone: +1 (313) 558-8243
Email: info@caplinq.com

Caplinq South East Asia

S-08-07 Persiaran Triangle
B Lepas, Penang 11900
Malaysia
Phone: +60(12)4302223
Email: info@caplinq.com

Property	Unit	EMC-9023	EMC-9023K	EMC-9023E
Thermal Properties				
Glass transition temperature	°C	162	150	150
Coefficient of thermal expansion, α_1	ppm/°C	13	11	11
Coefficient of thermal expansion, α_2	ppm/°C	47	46	43
Gel time at 175 °C	sec	60	52	56
Flammability	UL-94	V-0	V-0	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

Parameter	Unit	EMC-9023	EMC-9023K	EMC-9023E
Molding temperature	°C	170–180	150–180	170–180
Transfer pressure	kg _f /cm ²	70–150	30–100	70–150
Transfer time	sec	10–25	7–30	10–25
Cure time at 175 °C	sec	100–120	90–300	100–120
Post mold cure time at 175 °C	h	6–12	6–8	6–12

To achieve the best results, test the recommended conditions on the mold. Users should conduct their own testing to ensure it meets their specific needs and application.

Processing Instructions

- Before use, let **LINQSOL EMC-9023** compounds reach room temperature(23±5 °C) 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-9023 series 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.

Europe

Industrieweg 15E,
1566JN Assendelft
The Netherlands
Phone: +31 (20) 893 2224
Email: info@caplinq.com

Canada

80 Sirocco Crescent
Ottawa ON, K2S 2C9
Canada
Phone: +1 (613) 482-2215
Email: info@caplinq.com



North America

36927 Schoolcraft Rd
Livonia, MI 48150
United states
+1 (313) 558-8243
Email: info@caplinq.com

South East Asia

S-08-07 Persiaran Triangle
B Lepas, Penang 11900
Malaysia
Phone: +60(12)4302223
Email: info@caplinq.com