

OPTOLINQ™ TMC-688H



Optically clear epoxy molding compound

- Exceptional moldability with long spiral flow
- Low lumen decay
- Excellent reliability

OPTOLINQ™ TMC-688H is an optically clear epoxy molding compound specifically designed for the encapsulation of applications that requires low lumen decay and low stress molding. With its high glass transition temperature, it ensures good performance at high temperature environment.

OPTOLINQ™ TMC-688H offers excellent moisture resistance, maintaining performance even in high temperature and humidity conditions. **TMC-688H** stands out with its superior moldability and reliability, ensuring good quality and precision in optoelectronic device molding.

Property	Value	Unit
General Properties		
Pellet Color	White	–
Specific gravity	1.25–1.3	–
Spiral flow at 150 °C	170 ±70	cm
Thermal Properties		
Glass transition temperature	>145	°C
Coefficient of thermal expansion, α1	60 ±20	ppm/°C
Coefficient of thermal expansion, α2	180 ±20	ppm/°C
Gel time at 150 °C	25–60	s
Mold Shrinkage	<1.5	%
Mechanical Properties		
Flexural strength	>120	MPa
Flexural modulus	3.55 ±0.25	GPa
Optical Properties		
Transmittance at 400 nm**	>85	%

*Samples were cured using the following parameters. In mold cure: 4 min at 150 °C, Post-mold cure: 4 h at 150 °C

** Sample thickness is 1 mm.

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
Phone: +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

Recommended mold parameters

Parameter	Value	Unit
Preheat temperature	75–95	°C
Molding temperature	160 $\pm$ 10	°C
Molding pressure	3–8	MPa
Transfer time at 150 °C	75 $\pm$ 25	s
Cure time at 150 °C	2.5–4	min
Post mold cure time at 150 °C	4	h

The curing conditions provided are recommended guidelines based on typical laboratory results. Actual curing parameters should be defined and validated by the user to ensure compatibility with specific materials, mold design and package type, and end-use requirements. It is the user's responsibility to optimize and confirm curing conditions that meet their performance and quality standards.

Processing Instructions

- Before use, allow **TMC-688H** to reach room temperature (20 $\pm$ 5 °C, 40 $\pm$ 15% RH) for a minimum of 24 hours for larger pellets and 12 hours for smaller ones, ensuring the bag remains unopened to prevent moisture contamination.
- For **TMC-688H** in larger sizes, preheating can be performed using standard RF equipment. Preheating must be done slowly to achieve uniform temperature.
- Apply an outer releasing agent, such as silicones or fluorinated compounds, to the mold surface to facilitate easy release from the mold dies.
- Prior to molding with **TMC-688H** or any new material, the mold should be cleaned thoroughly. To prepare the mold, the initial three shots should be cured for 5–10 minutes. After this initial preparation period, you can reduce the curing time to a level that provides sufficient hot hardness for effective release.

Storage and Handling

OPTOLINQ™ TMC-688H 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, ideally at –10°C or lower. The shelf life under this condition is 6 months.

The technical information presented in this document is provided for reference only and does not constitute a guarantee of specific properties or performance. Actual results may vary depending on individual conditions and application methods. Users are strongly advised to perform their own testing and validation to determine suitability for their intended use and compliance with relevant regulations.

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