

OPTOLINQ™ LE-2441



One part solvent-free optically clear epoxy resin

- High thermal stability with a $T_g \sim 157^\circ\text{C}$
- UV curable encapsulation
- High optical transmittance

OPTOLINQ™ LE-2441 is a high-performance, UV-curable epoxy resin engineered for precision optical applications. Its fast-curing formulation delivers excellent light transmittance, and improved process efficiency. With a refractive index of 1.5665 and up to 90% transmittance at 900 nm, it is ideal for lenses, optical assemblies, and LED encapsulation. Upon curing, **OPTOLINQ™ LE-2441** forms robust cross-linked networks, providing strong adhesion and maintaining airtight seals. These properties make LE-2441 an ideal high-performance solution for demanding optoelectronic packaging applications.

Specifications

Property	Value	Unit
Uncured properties		
Appearance	Transparent liquid	—
Viscosity at 25 °C, S14, 100 rpm	2500 $\pm$ 500	cP
Refractive index at 589.3 nm, 25 °C	1.5483	—
Non-volatile content	100	%
Shelf life at 2–13 °C	8	months
Cured properties*		
Glass transition temperature (TMA)	157 $\pm$ 5	°C
Coefficient of thermal expansion, α_1	74	ppm/°C
Coefficient of thermal expansion, α_2	207	ppm/°C
Specific heat at 0 °C at 25 °C at 50 °C at 75 °C at 100 °C	5540 5770 6040 5390 5190	J/(kg·°C)
Moisture Absorption at 25 °C, 24 hr at 80 °C, 24 hr at 97 °C, 1.5 hr	0.30 4.38 1.21	%
Hardness	88 $\pm$ 5	Shore D
Specific gravity	1.21 $\pm$ 0.02	—

*Samples were cured using the following parameters. Irradiation intensity at 100 mW/cm² for 60 seconds.

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

Degradation temperature	377	°C
Weight loss ratio		
at 250 °C	0	%
at 300 °C	0.63	
at 350 °C	2.63	
Light Transmittance at 25 µm		
at 300 nm	0	%
at 400 nm	86	
at 500 nm	89	
at 900 nm	90	
Refractive Index at 589.3 nm, 25 °C	1.5665	—

Recommended Curing Conditions

Parameter	Value	Unit
Irradiation wavelength	310~365	nm
Irradiation intensity	100	mW/cm ²
Irradiation energy dose	6000	mJ/cm ²

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, part geometries, 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

- OPTOLINQ™ LE-2441 should be stored at 2–13 °C. Before use, keep the sealed container at ambient conditions for 1–2 hours. Do not open the lid until the temperature has equalised to prevent moisture condensation.
- Ensure that all application surfaces are clean, dry, and free of grease, dust, or mold-release agents. Wipe the surfaces with a suitable organic solvent to remove any contaminants that could affect the resin's adhesion or curing performance.
- Avoid contact with substances that can inhibit curing, such as amines, amine-cured epoxies, or polyurethanes (PU). Direct or indirect exposure to these materials may reduce or completely prevent proper curing of LE-2441. It is recommended to perform compatibility testing prior to production use.
- Wear appropriate protective equipment and minimize direct contact with the human body. Refer to the Safety Data Sheet (SDS) before use.

Storage and Handling

Store in a cold, dry, and clean environment between 2–13 °C with relative humidity below 70%. Keep away from exposure to direct sunlight. Do not store in outdoor environments. At proper storage conditions, shelf life is 243 days.

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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