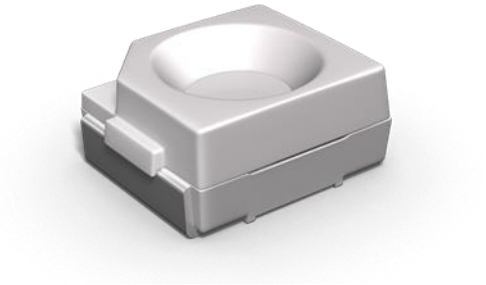
Technical Data Sheet
OPTOLINQ™ OLS-7000

Optically Clear One-Part Hybrid LED Liquid Encapsulant – January 2020

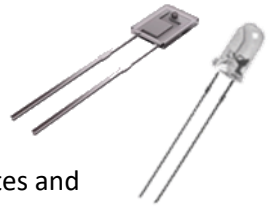
PRODUCT DESCRIPTION

CAPLINQ OPTOLINQ™ OLS-Series are a family of optically clear (often called "water-white") liquid encapsulants that are used to encapsulate optical or optoelectronic devices that require both a high level of light transmittance as well as a good level of mechanical protection. Products in this OLS-Series family can be epoxies, silicones or hybrid technologies. They are used extensively for the encapsulation of LED devices, but could be well suited for other applications that require a clear, optical grade encapsulation system.



OLS-7000 is a one-part, optically clear hybrid compound designed for the encapsulation of LED lamps and displays. It features excellent UV resistance, high optical transmittance, high adhesion to a range of substrates, and good thermal shock resistance. It was designed specifically to be a silicone-replacement material in mid-power LED applications where silicone is too expensive and does not offer the all the mechanical performance benefits of this hybrid system. It can be used in applications that operature continuously at 125°C without yellowing or losing optical transmittance. It is a one-part encapsulation solution which makes it incredibly easy to use and to automate.

PRODUCT APPLICATIONS



The OPTOLINQ OLS-7000 has been tested extensively in mid-power LED encapsulation that previously used a more expensive silicone. Each of these applications relies on the high clarity and other otpical properties of the OLS-7000 as well as its excellent mechanical properties. The OLS-7000 can be colored and diffused by the addition of specific dye concentrates and diffusant concentrates.

OPTOLINQ FAMILY SERIES

The OPTOLINQ OLS Series is CAPLINQ's Opto Liquid System (OLS) series and is made up of several families of products that each have their own unique attributes and application-specific benefits.

OPTOLINQ EPOXY SERIES

OLS-1 Series

Uses an epoxy-only base chemistry technology that is often characterized by:

- Max Temperature of 125°C
- Good sulphur resistance
- Lowest material price

OPTOLINQ SILICONE SERIES

OLS-3 and OLS-5 Series

OLS-3 dimethyl silicone and OLS-5 phenyl silicone series are technologies characterized by:

- Max Temperature of 150°C
- Best-in-class Heat/UV resist
- Refractive index up to 1.58

OPTOLINQ HYBRID SERIES

OLS-7 Series

Unique blends of hybrid chemistries giving a technology that is often characterized by:

- Max Temperature of 125°C
- High Refractive Index of 1.52
- Great balance price/performance

OPTOLINQ™ OLS-7000

Optically Clear One-Part Hybrid LED Liquid Encapsulant

January 2020

Main Applications:

- Mid-power LED Encapsulation
- UV-LED encapsulation
- Automotive sensor applications

Product Features & Benefits:

- No mixing – one part
- Temperatures up to 125°C
- High Refractive Index (1.52)
- Not tacky after cure
- Excellent sulphur resistance

TYPICAL UNCURED PROPERTIES OLS-7000

	Unit	Part A
Visual Appearance	-	Transparent
Specific Gravity	g/cc	1.32
Viscosity @ 25°C	cPs	100
Shelf Life @ -20°C	months	6

PROCESS AND HANDLING

Thawing time of 500g jar @ 25°C	hours	4
Pot Life of 125 grams @ 25°C	hours	8-10

CURE SCHEDULE

Recommended Cure Schedule	60 min @ 125°C + 4 hours @ 150°C
*Range for In-Mold Cure**	*30-60 min @ 110 - 125°C*
*Range for Post-Mold Cure**	*2-4 hrs @ 150°C*

**Note that the ranges indicated suggest parameters that can be tested by the customer. All CURED PROPERTY DATA measured after recommended cure condition*

TYPICAL CURED PROPERIES*

** Cured data measure on material after recommended cure schedule*

Mechanical Properties	**Unit**	**Value**
Hardness, Shore D	N/A	>88
Specific Gravity	g/cc	1.16
Glass Transition Temperature (Tg)	°C	152
Coefficient of Thermal Expansion (CTE)		
Alpha 1	ppm/°C	69
Alpha 2	ppm/°C	171
Moisture Absorption		
After 1hr @ 100°C	%	<0.23

Optical Properties	**Unit**	**Value**
Refractive Index @ 460nm	N/A	1.52
Optical Transmittance, 1mm sample @ 460nm	%	>92%

ADDITIONAL HANDLING INSTRUCTIONS

For best results, ensure that all moisture has been removed from the parts to be encapsulated by preheating them for 1 hour @ 90°C. Also for best results, the encapsulation should be carried out in a vacuum.

USING ADDITIVES WITH OLS-7000

Optolinq OLS-7000 can be mixed with diffusing agents or color pastes to achieve customer-specific purposes.

PACKAGE SIZES

OPTOLINQ OLS-7000A/B has a mix ratio of 1:1, so each order should contain equal amounts of resin and hardner

Part Number	Includes	Package Size	Dimensions Height x Width Diameter	Net Weight	Gross Weight
OLS-7000/1qt	OLS-7000A/1qt	1 quart 0.95L	125mm x 114mm 102mm diameter	1.36kg	1.76kg

STORAGE AND HANDLING

OPTOLINQ OLS-7000 is supplied in cans and jars and should be kept in a cool (10°C – 25°C) dry place (40% – 75% humidity) away from direct sunlight or temperature extremes. Part B is particularly sensitive to moisture, so be sure to remove moisture after using and to keep the lid of the container tightly sealed after use.

For safe handling information on this product, consult the Safety Data Sheet, (SDS).

DATA RANGES

The data contained herein may be reported as a typical value and/or range values based on actual test data and are verified on a periodic basis.

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