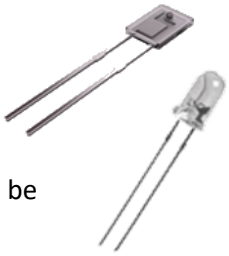
Technical Data Sheet
OPTOLINQ™ OLS-1000

Optically Clear Two-Part Epoxy LED Liquid Encapsulant – January 2020

PRODUCT DESCRIPTION

OPTOLINQ OLS-1000 is a two-part (Part A & Part B), optically clear epoxy casting 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 is geared specifically for applications that will not be exposed to temperatures above 125°C, and where the cost of the encapsulation material is a large percentage of the final part cost. The OLS-1000 has been value-engineered to provide the minimum level of acceptable performance for the absolute lowest cost.

PRODUCT APPLICATIONS



The OPTOLINQ OLS-1000 has been used extensively for low-power LED encapsulation, automatic LED casting, and potting of large optoelectronic modules. Each of these applications relies on the high clarity and other otpical properties of the OLS-1000 as well as its excellent mechanical properties. The OLS-1000 can be colored and diffused by the addition of specific dye concentrates and diffusant concentrates.

OPTOLINQ FAMILY SERIES

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.

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-1000

Optically Clear Two-Part Epoxy LED Liquid Encapsulant

January 2020

Main Applications:

- Low-power LED Encapsulation
- LED casting
- Optoelectronic module casting and encapsulation

Product Features & Benefits:

- Mix Ratio 100:100
- Temperatures up to 125°C
- High Refractive Index (1.52)
- Good sulphur resistance
- Low viscosity
- Good degassing properties
- Lowest material price

TYPICAL UNCURED PROPERTIES OLS-1000 PART A / PART B

	Unit	Part A	Part B
Visual Appearance	-	Light Purple Transparent	Clear Transparent
Specific Gravity	g/cc	1.15	1.17
Viscosity @ 25°C	cPs	1000	40
Shelf Life @ 25°C	months	6	6

PROCESS AND HANDLING

Mix Ratio, by weight	100:100
Pot Life of 40 grams @ 25°C	4 hours

CURE SCHEDULE

Recommended Cure Schedule	30 min @ 130°C + 6 hours @ 120°C
*Range for In-Mold Cure**	*20-60 min @ 110 - 150°C*
*Range for Post-Mold Cure**	*6-8 hrs @ 100 - 120°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	130
Coefficient of Thermal Expansion (CTE)		
Alpha 1	ppm/°C	60
Alpha 2	ppm/°C	183
Moisture Absorption		
After 1hr @ 100°C	%	<0.35

Electrical Properties	**Unit**	**Value**
Volume Resistivity, @ 25°C	ohm-cm	>10E14
Surface Resistivity, @ 25°C	ohm	>10E14
Dielectric Strength, @ 25°C	kV/mm	>23

Optical Properties	**Unit**	**Value**
Refractive Index @ 460nm	N/A	1.52
Optical Transmittance, 1mm sample		
@ 460nm	%	>90%

ADDITIONAL HANDLING INSTRUCTIONS

Preheat Part A to 40°C and then mix in Part B in the required mixing ratio given above. Ideally, the mixture of Part A and B will be done in a vacuum and degassed at 3 torr (400 Pa) for 10-15 minutes. This will ensure that all the entrapped air bubbles are removed after mixing. 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-1000

Optolinq OLS-1000 can be mixed with diffusing agents or color pastes to achieve customer-specific purposes.

PACKAGE SIZES

OPTOLINQ OLS-1000A/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-1000/1qt	OLS-1000A/1qt	1 quart 0.95L	125mm x 114mm 102mm diameter	1.36kg	1.76kg
	OLS-1000B/1qt	1 quart 0.95L	125mm x 114mm 102mm diameter	1.6kg	2.0kg
OLS-1000/1ga	OLS-1000A/1ga	1 gallon 3.79L	195mm x 180mm 168mm diameter	5.1kg	5.5kg
	OLS-1000B/1qt	1 gallon 3.79L	125mm x 114mm 102mm diameter	6kg	6.4kg

STORAGE AND HANDLING

OPTOLINQ OLS-1000 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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