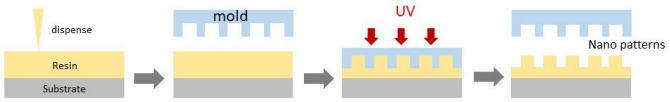
L2002-C58

UV-Curable Optical Resin for Nano Imprint Lithography



PRODUCT DESCRIPTION:

- Base chemistry: acrylate, radical polymerization
- One component resin ready for use, solvent-free, UV curing

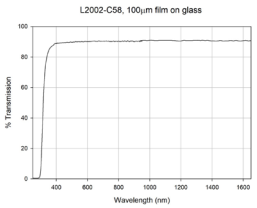
PRODUCT USE:

- Micro/Nano imprint Lithography
- Lens: Wafer Level Optics lens (WLO), micro lens array (MLA), etc.
- LiDAR lens

FEATURES:

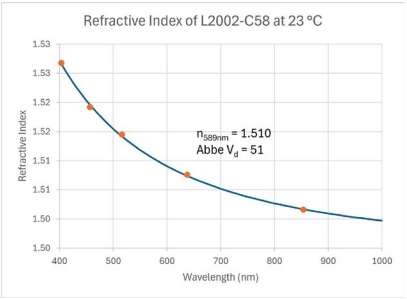
- High Tg, robust reliability performances, high heat resistance, good flow properties, excellent adhesion, high hardness, and spin coat-able
- Suitable for solder reflow post process

OPTICAL DATA:



Refractive index of cured film (23 °C) @ 589 nm: 1.51 ± 0.01

Refractive index at 23 °C vs wavelength



Abbe Number at 25 °C (V_d): 52

GENERAL USAGE INFORMATION:

Shipment: no restriction on shipment

Storage: After receipt in black syringes or amber HDPE bottles, room temperature storage (15-30°C) in the original container is required.

Shelf life (20 - 30°C): 6 months

Pot life or working life (20 - 30°C): 3 months

UV CURING CONDITIONS: L2002-C58 is required to be cured in between two substrates, or in the absence of air.

UV curing conditions for film thickness of 5 to 125 micron

- UV curing conditions: UV dose (mJ/cm^2 in nitrogen) >1,000
- Light sources:
  * Metal halide/Mercury UV: UV-A (320-400 nm),intensity: 100-1,000 mW/cm^2
  * or LED-365 nm, UV light intensity: 100 to 1,000 mW/ cm^2

LED-365 nm		Metal Halide/Mercury(UV-A: 320-400 nm)	
UV intensity(mW/cm^2)	x time (sec)	UV intensity(mW/cm^2)	x time (sec)
100	10 to 20 sec	100	10 to 20 sec
or 200	5 to 10 sec	or 200	5 to 10 sec
or 300	4 to 6 sec	or 300	4 to 6 sec
or 400	3 to 5 sec	or 400	3 to 5 sec
or 500	2 to 4 sec	or 500	2 to 4 sec
or 1,000	1 to 3 sec	or 1,000	1 to 3 sec

Application notes for curing at thick film: 0.5 to 1.2 mm

It is possible to cure L2002-E20 at thick section with UV dose of ≥ 25 J/cm^2

- UV Metal Halide or Mercury UV light source with UV-A (320-400 nm) with UV light intensity: 250 to 1,000 mW/ cm^2
- LED-365 nm with UV light intensity: 250 to 1,000 mW/ cm^2

LED-365 nm		Metal Halide/Mercury(UV-A: 320-400 nm)	
UV intensity(mW/cm^2)	x time (sec)	UV intensity(mW/cm^2)	x time (sec)
250	100 sec or more	250	100 sec or more
or 500	50 sec or more	or 500	50 sec or more
or 1,000	25 sec or more	or 1,000	25 sec or more

TYPICAL PROPERTIES

Uncured resin	
Viscosity at 25 °C, mPa.s or cps	950 to 1,200
Density (g/mL)	1.1
Cured film	
Appearance of cured adhesive	optically clear
Shrinkage (volume, %)	1,2
Hardness – Shore D	80-85
Glass transition temperature (DMA, °C)	125
Coefficient of thermal expansion (ASTM E831)	
below Tg (x10^{-6}), °C^{-1}	59
above Tg (x10^{-6}), °C^{-1}	145
Physical properties tested at 25°C, 50% RH (ASTM D638, and ASTM D790)	
Tensile strength, MPa	30
Elongation (%)	70
Young's Modulus, MPa	1,000
Operating temperature, °C	-40 to 150

SAFETY AND HANDLING

The uncured adhesive can be cleaned with isopropyl alcohol (IPA), methyl ethyl ketone (MEK), acetone, or xylene. Avoid direct skin and eye contact. Use only in well ventilated areas. Use protective clothing, **gloves and safety goggles**. Read Safety Data Sheet before handling. TDS updated 7-2025 V1

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