



# IP-159-B

## UV-curable Imprint Lithography Resin

### Features

- Excellent replication characteristic
- High refractive index
- UV-curable
- Spin coat-able
- Excellent adhesion to glass and treated plastic substrates

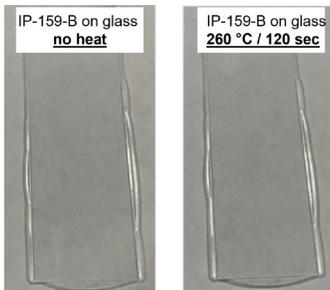
### Description

- UV-curable acrylate resin

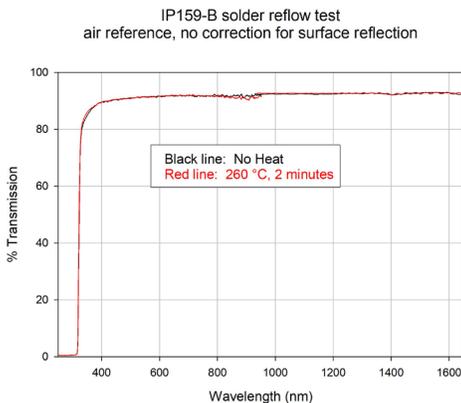
### Application

- High refractive index nanoimprint lithography resin

### Features: high heat resistance



### Optical data: UV-vis-Near-IR



**UV CURING CONDITIONS:** IP-159-B is required to cure in between two substrates, in nitrogen or in the absence of air.

- UV curing conditions: UV dose (mJ/cm<sup>2</sup> in nitrogen) >500
- Light sources:
  - \* Metal halide/Mercury UV: UV-A (320-400 nm), intensity: 200-1,000 mW/cm<sup>2</sup>
  - \* or LED-365 nm, UV light intensity: 100 to 1,000 mW/cm<sup>2</sup>

LED-365 nm		Metal Halide/Mercury(UV-A: 320-400 nm)	
UV intensity(mW/cm <sup>2</sup> )	x time (sec)	UV intensity(mW/cm <sup>2</sup> )	x time (sec)
300	4 to 6 sec	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

### TYPICAL PROPERTIES

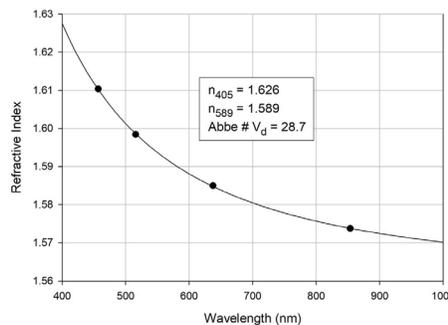
Before curing: liquid

Viscosity (cps, 25 °C)	300 –500
Density (g/mL)	1.15
Storage (°C)	15 – 25
Shelf life (15 - 25 °C)	6 months
Pot life (15 - 25 °C)	3 months

After curing: cured film

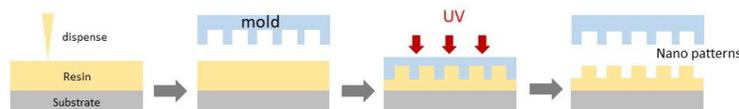
Shrinkage (%)	2.0
Hardness – Shore D	75
Glass transition temperature (DMA, °C)	75
Specific heat (J/Kg °C)	1,200
Thermal Conductivity (W/m K)	0.2
Refractive index of cured film (25 °C)	
@ 405 nm	1.62 ± 0.01
@ 589 nm	1.59 ± 0.01
@ 940 nm	1.57 ± 0.01

Refractive index at 25 °C vs wavelength



Abbe Number at 25 °C (V<sub>d</sub>)

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V2 102022