



# BD 119

## UV-curable Replication Resin

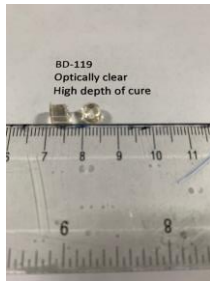
### Features

- Excellent replication characteristic
- High Tg
- Low shrinkage
- UV-curable
- Low viscosity
- Spin-coatable

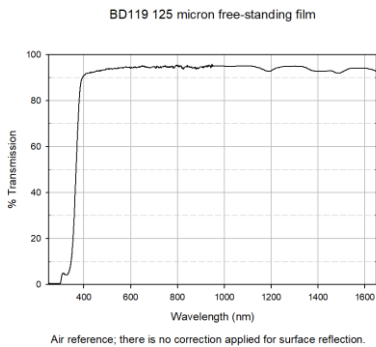
### Description

- UV-curable acrylate resin

### Optical clear



### UV-VIS NIR spectra



### APPLICATIONS

Nano imprinting applications.

### TYPICAL PROPERTIES

#### Before curing: liquid

Viscosity (cps, 25 °C)	390 to 420
Density (g/mL)	1.15
Storage (°C)	15 – 25
Shelf life (15 - 25 °C)	4 months
Pot life (15 - 25 °C)	2 months

#### After curing: cured film

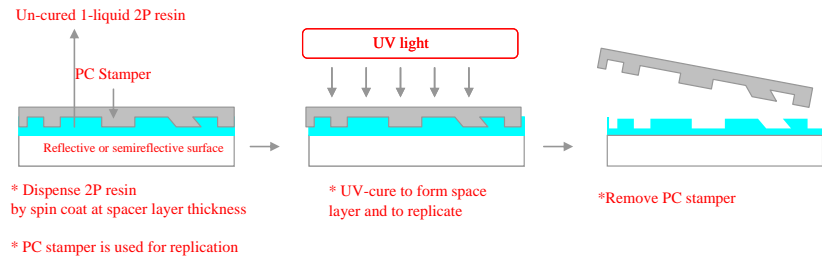
Outgas, weight % (125°C, 120 hr, air)	0.10
Water absorption (% , 100 °C until saturation)	0.3
Shrinkage (%)	2.0
Hardness – Shore D	90-95
Glass transition temperature (DMA, °C)	131
Specific heat (J/Kg °C)	1,200
Thermal Conductivity (W/m K)	0.2
Coefficient of thermal expansion (DMA by compression), 2 mm thick sample	
below Tg (x10 <sup>-6</sup> ), °C <sup>-1</sup>	81
above Tg (x10 <sup>-6</sup> ), °C <sup>-1</sup>	149
Refractive index of cured film (25°C)	
@ 589 nm	1.5165

#### Physical properties tested at 25°C, 50% RH (ASTM D638)

Tensile strength (MPa)	45
Elongation (%)	15
Young's Modulus (MPa)	1,800

UV curing conditions: UV dose (mJ/cm<sup>2</sup> in nitrogen) >100

\*\*\*A light source producing 250 to 400 nm is best match for this resin. Cure speed or tack free time depends on the intensity of the UV source, thickness of 2P resin layer, and transmission of the substrates



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