



AC R221

UV-Curable, Low Refractive Index Cladding Compound

PRODUCT DESCRIPTION:

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

PRODUCT USE:

- Optical adhesive for fiber coupling bonding
- Cladding compound for optical fiber

FEATURES:

- Low refractive index, good flow properties, low viscosity

GENERAL USAGE INFORMATION:

Shipment: no restriction on shipment

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

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.

UV CURING CONDITIONS:

- *Metal halide/Mercury UV: UV-A (320-400 nm), intensity: 100-1,000 mW/cm²
- *or LED-365 nm, UV light intensity: 200 to 1,000 mW/cm²

The adhesive is required to be cured between two substrates or in the absence of air (cure in nitrogen or an inert atmosphere).

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)
200	20 sec or more	100	20 sec or more
or 300	10 sec or more	or 200	10 sec or more
or 400	7 sec or more	or 500	5 sec or more
or 500	3 sec or more	or 1,000	2 sec or more
or 1,000	2 sec or more		

TYPICAL PROPERTIES

Uncured resin

Viscosity at 25 °C, mPa.s or cps	100 to 150
Density (g/mL)	132
Shelf life (20 - 30°C):	6 months
Pot life or working life (20 - 30°C):	3 months

Cured film

Appearance of cured adhesive optically clear
Recommended thickness: 10 to 100 µm for optical clear adhesive. If the layer is thick >100 µm, the adhesive will look translucent.

Shrinkage (linear, %)	< 0.4
Hardness – Shore D	50
Glass transition temperature (DMA, °C)	70

Refractive index of cured film (25 °C)

@ 589 nm (D)	1.416
@ 1320 nm	1.407
@ 1550 nm	1.405

Depth of cure >100 µm

Coefficient of thermal expansion (DMA)

below T _g (x10 ⁻⁶), °C ⁻¹	72
above T _g (x10 ⁻⁶), °C ⁻¹	160

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

Elongation (%)	15
Young's Modulus, MPa	24

Operating temperature, °C -40 to 140

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