



AC L2002-C42

UV-Curable, High Refractive Index Optical Material for Lens Applications

Features

- High Tg
- High Refractive Index
- Good flow properties
- High Hardness

Description

- UV-Curable, High RI material

Thermal stability

- Optical clear at high temperature



APPLICATIONS

Optical Lens Applications

TYPICAL PROPERTIES

Liquid

Viscosity (cps, 25 °C)	2,600 to 3,000
Storage (°C)	15 to 25 °C
Shelf life (15 - 25 °C)	6 months
Pot life (15 - 25 °C)	3 months

Cured film

Shrinkage (linear, %) < 0.3

Glass transition temperature (°C, DMA) 150

Hardness – Shore D 90

Refractive index of cured film (22.5°C)

@ 589 nm (D)	1.515
@ 486 nm (F)	1.524
@ 656 nm (C)	1.513

Abbe Number (V_d) 47

Depth of cure (mm) >5

Coefficient of thermal expansion (TMA), 75 µm film
below Tg ($\times 10^{-6}$, °C⁻¹) 24
above Tg ($\times 10^{-6}$, °C⁻¹) 121

Physical properties tested at 25°C, 50% RH (ASTM D638)
Elongation (%) 8
Modulus, psi 300,000

Extractable Ionic Content
Chloride (Cl⁻), ppm 10
Sodium (Na⁺), ppm 8
Potassium (K⁺), ppm 10

Operating temperature (°C) -40 to 140

UV curing conditions

Flood cure system – UV dose (J/cm²), in nitrogen 1.0

For complete surface cure and thorough cure, curing in nitrogen or curing between two substrates is required

* Minimum intensity recommended for Spot lamp system: 500 mW/cm²

** Intensity recommended for Flood lamp system: 49 WPCM or 125 WPI

SAFETY AND HANDLING

The un-cured adhesive can be cleaned from apparatus with isopropyl alcohol (IPA), methyl ethyl ketone (MEK), or commercial alcohol based cleaning solution.

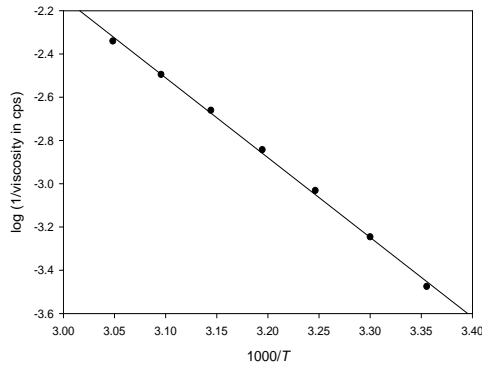
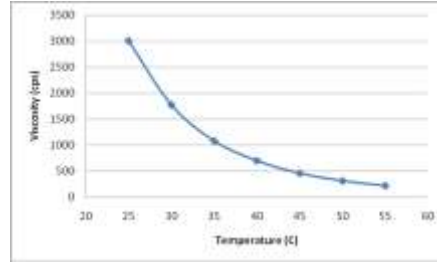
Use caution in handling this material. Avoid direct skin and eye contact. Use only in well ventilated areas. Use protective clothing, **gloves and safety goggles**. Read [Material Safety Data Sheet](#) before handling.

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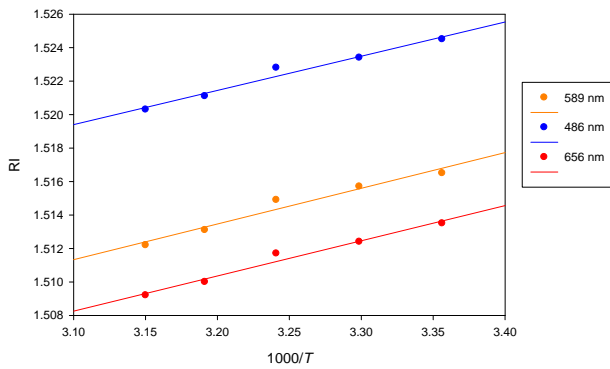
Viscosity vs. temperature data

Temperature (°C)	Viscosity (cps)
25	3,000
30	1,770
35	1,080
40	700
45	460
50	314
55	220



viscosity in cps = $10^{((3690/(273+T)) - 8.930)}$, where T is temperature in °C

Refractive index vs. temperature



Calculated Refractive Index (R.I) L2002-C42

wavelength (nm)	function (T is temperature in °C)
589	R.I. = $1.4452 + 21.32 / (T + 273)$
486	R.I. = $1.4561 + 20.42 / (T + 273)$
656	R.I. = $1.4431 + 21.01 / (T + 273)$