AC L2007

UV-Curable, High Refractive Index Optical Resin

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

PRODUCT USE:
- Nano imprinting
- Lens making
- Lens and prism bonding

FEATURES:
- High Tg, high refractive index, good flow properties, high heat stability and high hardness

THERMOGRAVIMETRIC ANALYSIS:
Scan rate: 20°C/min

UV-CURING CONDITIONS: L2007 is required to cure in nitrogen or in the absence of air.

*Metal halide/Mercury UV: UV-A (320-400 nm), intensity: 50-1,000 mW/cm²
*or LED-365 nm, UV light intensity: 100 to 1,000 mW/ cm²

<table>
<thead>
<tr>
<th>Wavelength (nm)</th>
<th>% Transmission</th>
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<tbody>
<tr>
<td>400</td>
<td>0</td>
</tr>
<tr>
<td>600</td>
<td>20</td>
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<tr>
<td>800</td>
<td>40</td>
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<tr>
<td>1000</td>
<td>60</td>
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<tr>
<td>1200</td>
<td>80</td>
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<tr>
<td>1400</td>
<td>100</td>
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<tr>
<td>1600</td>
<td>100</td>
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</tbody>
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UV-VIS and NIR spectra:

TYPICAL PROPERTIES

Uncured resin
- Viscosity at 25 °C, mPa.s or cps: 8,000 to 10,000
- Density (g/mL): 1.1
- 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
- Shrinkage (linear, %): < 0.3
- Hardness – Shore D: 87
- Glass transition temperature (DMA, °C): 109

Refractive index of cured film (25 °C)
- @ 589 nm (D): 1.567
- @ 486 nm: 1.576
- @ 546 nm: 1.565
- @ 656 nm: 1.561

Abbe Number at 25 °C (V₅) 38

Depth of cure: >5 mm

Coefficient of thermal expansion (DMA) below Tg (×10⁻⁶), °C⁻¹: 37
above Tg (×10⁻⁶), °C⁻¹: 171

Physical properties tested at 25°C, 50% RH (ASTM D638)
- Elongation (%): 4.6
- Young’s Modulus, MPa: 2,100

Operating temperature, °C: -40 to 140

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.

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.