Part Number: PCOPM-2-47-BPA
Nanocrystal: ZrO₂ – PM (90wt% loading in monomers)
Monomers: Bisphenol A Diglycerolate Dimethacrylate
Solvent: PGMEA
Photoinitiator: UV curing agent is included

The following cleaning process is recommended before spin coating films:
1. Using a detergent-RO water mixture (eg. 2% Valtron), scrub the glass substrates with a nylon brush
2. Rinse the substrate with RO water thoroughly
3. Dip the substrate into isopropyl alcohol
4. Oven dry at 100°C for 20 minutes
5. Optional: Ozone treat for 5 minutes on the side of substrate to be coated

Spin Coating and Curing Process:
1. With the clean substrate on a spin-coater chuck, use a pipette to cover the surface of the substrate with PCPN-80-BMT
2. Pre-spin film at 250 rpm for 45 seconds at an acceleration of 250 rpm/s². Then, increase spin speed to desired rpm based on spin curve above. This should be at an acceleration 250 rpm/s² less than the desired spin speed. Spin film at this speed for 15 seconds.
   eg. If a 1.5 µm film is desired, spin at 250 rpm at 250 rpm/s² for 45 seconds followed by 3000 rpm at an acceleration of 2750 rpm/s² for 15 seconds
   Note: these conditions are for 2.5”x2.5” 0.7mm thick soda lime glass substrates.
   Conditions for other substrates may vary
3. Cure using a mercury “H” bulb at 9J/cm²
   Note: Pixelligent uses a Dymax EC-5000 system and cures films for 180 seconds at 50mW/cm²
4. Post-bake at 120°C for 3 minutes in air
Typical Data from Spin-Coated Films

<table>
<thead>
<tr>
<th>Wavelength (nm)</th>
<th>RI</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>1.750</td>
</tr>
<tr>
<td>450</td>
<td>1.770</td>
</tr>
<tr>
<td>500</td>
<td>1.790</td>
</tr>
<tr>
<td>550</td>
<td>1.810</td>
</tr>
<tr>
<td>600</td>
<td>1.830</td>
</tr>
<tr>
<td>650</td>
<td>1.850</td>
</tr>
<tr>
<td>700</td>
<td>1.870</td>
</tr>
</tbody>
</table>

Typical Refractive Index of PCOPM-2-47-BPA - Ellipsometry

- %T
  - Lambda 850 UV-Vis spectrometer: >95
- RI @ 633nm
  - Metricon prism coupler: 1.801
- Abbe Number: 36
**High Temperature Stability:** the blue curve is the transmittance of the freshly made film while the orange curve is the transmittance of the film after 1 hour 250 °C baking under vacuum. The consistency of transmittance demonstrates the high temperature stability of PCOPM-2-47-BPA.

![Transmission of PCOPM-2-47-BPA](image)

**Chemical Resistance:** the following table shows that PCOPM-2-47-BPA resists all the common wet-processes during OLED panel fabrication. Adhesion to glass substrate is tested by scotch tape with no cross-hatching and a green check mark indicates passing performance.

<table>
<thead>
<tr>
<th></th>
<th>HCl/H₂O (1:3) 5 min</th>
<th>HCl/H₂O (1:1) 5 min</th>
<th>KOH (0.5wt%) 5 min</th>
<th>KOH (1wt%) 5 min</th>
<th>KOH (5wt%) 5 min</th>
<th>Acetone/Sonicate 5 min</th>
<th>IPA/Sonicate 5 min</th>
<th>DI Water 5 min</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCOPM-2-47-BPA</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>