Technical Tip

1.67 High-Index Information and Processing Guide (MR7 and MR10)

1.67 Availability

1.67 – MR7, MR10
Aspheric Semi-Finished Single Vision
70mm Aspheric Single Vision (SRC®, NSRC®)

1.67 – MR7, MR10
Aspheric Semi-Finished Single Vision
75mm Aspheric Single Vision (SRC®, NSRC®)

1.67 – MR7, MR10
Spherical Semi-Finished Single Vision
70mm, 75mm Spherical Single Vision (SRC®, NSRC®)

1.67 A FSV SuperHydro AR
Aspherical Finished Single Vision
65mm, 70mm, 75mm Finished Single Vision

For lens specifications, see the 1.67 High-Index Product Reference Guide on our website.
# Technical Tip

## Material Characteristics

<table>
<thead>
<tr>
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<th>MR-7™</th>
<th>MR-10™</th>
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<tbody>
<tr>
<td><strong>Refractive Index</strong></td>
<td>1.67</td>
<td>1.67</td>
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<td><strong>Abbe Number</strong></td>
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<td>(ve)</td>
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<tr>
<td><strong>Tg</strong></td>
<td>85</td>
<td>100</td>
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<tr>
<td>(°C)</td>
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<tr>
<td><strong>Tintability</strong></td>
<td>Excellent</td>
<td>Good</td>
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<tr>
<td><strong>Impact Resistance</strong></td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td><strong>Bayer Rating</strong></td>
<td>2.0</td>
<td>2.0</td>
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<tr>
<td><strong>Tensile Strength</strong></td>
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<td>Good</td>
</tr>
<tr>
<td><strong>Center Thickness (CT)</strong></td>
<td>2.0 mm</td>
<td>2.0 mm</td>
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<tr>
<td><strong>Plano</strong></td>
<td></td>
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<tr>
<td><strong>-4.00</strong></td>
<td>1.2 mm</td>
<td>1.2 mm</td>
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<tr>
<td><strong>-12.00</strong></td>
<td>1.1 mm</td>
<td>1.1 mm</td>
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**Key Material Characteristic**
- Enhanced Tintability
- Superior Heat Resistance
Technical Tip

PROCESSING 1.67 High-Index (MR7 and MR10)

Layout/Taping
- Taped lenses should be free of wrinkles, air bubbles, and foreign debris.
- **Do not** leave lenses taped and blocked overnight.

Blocking
- Use 117°F alloy or thermoset plastic wax (blocking medium) and keep temperature as low as possible.
- Allow to cool for 20 minutes prior to generating.

Surfacing
- The labs that process 1.67 will generate it like 1.67 index.
- Minimum thickness is 1.1mm.
- MR10 is advised for high temperature processing due to superior heat resistance.

Fining/Polishing
- The labs that will process 1.67 will fine and polish it with the same pads, pressures and temperatures as 1.67 index.

De-blocking/Washup
- It is advised that the time between polishing and de-blocking does not exceed 15 minutes.
- Standard “shock” de-block with cylindrical tube.
- Wash, rinse and warm air dry with care knowing that the lens is uncoated.

Dip Coating/AR Coating of Uncoated
- It is critical that 1.67 uncoated lenses go through a quality dip coating process that is thermally cured for proper adhesion to the 1.67 material and acts as a quality base coating for the subsequent AR stack.

Backside Spin Coating of SRC Coated 1.67
- If you will not be tinting your lenses VISION EASE recommends AST-1 by Ultra Optics because of the enhanced bonding properties.
Technical Tip

FINISHING 1.67 High-Index (MR7 and MR10)

Blocking
• Apply protective tape to both sides of the lens.
• Use edging blocks that best match the front curve of the lens.
• Use minimum pressure to apply the block to avoid flexing of the lens.

Edging
• The shape of front and backside chucks should be similar to minimize flexing.
• Ensure edger chuck pads are clean.
• Avoid excessive pressure when chucking the lens. Set pressure at the manufacturer’s minimum, soft or recommended setting for high-index materials.
• Ensure all edging wheels and cutter blades are clean and sharp. Follow manufacturer recommendations for cleaning, re-true, and replacement. Dull wheels or blades increase stress during edging, which may lead to coating cracks.
• Use several slow cuts to reduce lens size.
• Reduce head pressure and flow rate to manufacturer’s recommendation.
• Do not edge glass lenses with the same edger as particles in the coolant and on chuck pads increase the risk of scratches.

De-blocking
• Rinse the lens in lukewarm water before handling.
• Twist the block to remove it from the lens. Do not pull if from the surface. Avoid flexing or bending the lens.
• Soaking the lens in soapy water for a few minutes will help to loosen the block prior to removal.
• Aggressive deblocking can cause AR coating to crack.
• Removing the block after inserting the lens in the frame will help to prevent flexing.

Pin Beveling
• Use light pressure when PIN beveling and while edge polishing.

Axis Alignment
• Use lens alignment pliers only if necessary, trying to avoid altogether.
FINISHING 1.67 High-Index (MR7 and MR10) (Continued)

Drilling
- 1.67 drills best with a sharp burr operated at low speed and minimal to moderate pressure. Twist style drills, cutting less aggressively, often leave subsurface damage.
- Place lens with front towards drill bit and slowly operate drill through lens; back drill bit out of hole often to remove cutting debris that will increase heat damage.
- Be sure to chamfer around the hole when finished drilling (much like safety beveling after edging).
- Note that excessive pressures and speed create damaging heat, which may create eventual fractures.

Tinting
- 1.67 MR7 is advised for tinting. VISION EASE recommends UVNV backside coating and MR7 if your process includes tinting.
- AST1 backside coating is recommended if your process does not include tinting.
- 1.67 is suitable for AR coatings.

*For more information, see the Lens Tinting Technical Tips on our [website](#).*