High Clarity. High Gloss. Low VOC.

ROSHIELD™ 4000 Acrylic Resin is a new, self-crosslinking polymer that’s making a difference in waterborne wood coatings.

- Acrylic resin is based on novel technology that crosslinks rapidly after film formation. This enhances key performance properties such as early chemical resistance, block and print resistance, and hardness development.
- Crosslinking doesn’t rely on oxidative curing, so there is no yellowing even when applied over formaldehyde-emitting substrates such as engineered wood or varnish-coated trim.

ROSHIELD™ 4000 Acrylic Resin offers two-component performance in a one-component waterborne system.

### Key Features
- **Self-crosslinking**
- **Self-sealing**
- **Non-yellowing**
- **Excellent adhesion, clarity and gloss**
- **Excellent appearance on dark and light woods**
- **Superior chemical resistance**
- **Excellent block and print resistance**
- **Low-VOC capable**
- **Easy to use**
- **One component system**

### How it works
- Accelerates self-crosslinking after film formation.
- Crosslinking after film formation enhances early chemical and solvent resistance.
- Allows for optimal film formation with proper formulation technique.

### Applications
ROSHIELD 4000 Acrylic Resin is ideally suited to factory and field-applied waterborne interior wood finishes. It is recommended as a sealer and topcoat in clear coatings and offers excellent appearance over both dark and light woods. The novel self-crosslinking technology does not yellow over formaldehyde-emitting substrates and basecoats, which allows for the use of this technology over a broader range of wood applications than current self-crosslinking acrylic resins. ROSHIELD 4000 Acrylic Resin also may be used in pigmented sealers and topcoats, such as coatings for kitchen and bath cabinetry and furniture. Our internal testing shows that sealer/topcoat systems based on ROSHIELD 4000 Acrylic Resin pass KCMA standards for cabinet coatings.

### Clearly Different

**SB Alkyd / Urea Sealer**

<table>
<thead>
<tr>
<th>SB Alkyd / Urea Sealer</th>
<th>WB-3 Clear Topcoat</th>
<th>WB-4 Clear Topcoat</th>
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<tr>
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#### Figure 1.
Clear topcoats applied over solvent-borne alkyd/urea conversion varnish sealer that releases formaldehyde. On left, the waterborne coating that relies on an oxidative curing mechanism turns yellow. At right, the waterborne coating based on ROSHIELD 4000 Acrylic Resin stays clear.

#### Figure 2.
Results of testing pigmented coatings as gloss white enamels. ROSHIELD™ 4000 Acrylic Resin vs. Conventional Self-Crosslinking Acrylic

<table>
<thead>
<tr>
<th>Formulation Details</th>
<th>Konig Hardness (seconds)</th>
<th>Block Resistance (1 day dry)</th>
<th>Block Resistance (7 day dry)</th>
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<tbody>
<tr>
<td><strong>ROSHIELD™ 4000 Acrylic Resin</strong></td>
<td>166 19 33.2</td>
<td>19 33 46 57 67</td>
<td>6 9 10 10</td>
</tr>
<tr>
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<td>165 19 33.2</td>
<td>16 22 27 33 35</td>
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#### Figure 3.
MEK resistance (double rubs) vs. cure time of clear formulation based on ROSHIELD 4000 Acrylic Resin compared to the current waterborne acrylic with self-crosslinking using oxidative curing mechanism. ROSHIELD 4000 Acrylic Resin allows for faster development of chemical resistance.

#### Figure 4.
Some furniture chemical resistance testing of a clear formulation based on ROSHIELD 4000 Acrylic Resin compared to the current waterborne acrylic with self-crosslinking using oxidative curing mechanism and a WB thermoplastic acrylic. The system based on ROSHIELD 4000 Acrylic Resin has good chemical resistance compared to the other systems. The tests were completed after 7 days cure over maple substrate and were rated on a scale of 1 to 10, 10=no effect.
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