ESSENTIAL
R5191
SELF CROSS-LINKING
ACRYLIC EMULSION

Essential R5191 is a self cross-linking acrylic polymer that can be formulated into <50 g/l concrete sealers. When formulated properly the finish exhibits excellent wet adhesion properties, is non-blushing, non-yellowing and shows excellent chemical and stain resistant properties.

Can be formulated into interior and exterior wet look sealers.

**KEY BENEFITS**
- Wet adhesion properties
- Resistant to acids, bases and stains
- Formulate to < 50 g/l
- Non-blushing
- Compares favorably with solvent-based acrylic system
- Excellent water resistance
- Passes ASTM C309

**TYPICAL PROPERTIES***
- Appearance .................. Translucent
- Tg ........................................ 6°C
- Acid Number ...................... 40
- Solids, % by Weight ............ 41
- Viscosity, cP @ 25°C .......... 200
- Density, Lbs./Gal. ............. 8.70
- VOC Level (As Supplied)
  - Lbs./Gal. .................. 0.0
  - G/L ........................ 2.3

*These values should not be interpreted as specifications.

DISCLAIMER: The information and recommendations contained herein are based on data believed to be correct. The information is offered solely for the customer’s consideration, investigation and verification because of numerous factors beyond our control affecting the results of the use of products, Essential Industries, INC. makes no warranty of any kind, expressed or implied, including those of merchantability and fitness for a particular purpose, other than that the product conforms to its applicable current standard specification. The manufacturer’s only obligation shall be to replace such quantity of the product proven to be defective.
ESSENTIAL R5191
Self-Cross-Linking Acrylic Emulsion

Starting Point Formulation – ALW063

Materials

<table>
<thead>
<tr>
<th>Product</th>
<th>Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential R5191</td>
<td>608.00</td>
</tr>
<tr>
<td>Dynol 604</td>
<td>2.90</td>
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</tbody>
</table>

Pre-blend water and solvent, then add.

<table>
<thead>
<tr>
<th>Material</th>
<th>Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>344.80</td>
</tr>
<tr>
<td>PPH</td>
<td>7.90</td>
</tr>
<tr>
<td>BYK 028</td>
<td>0.50</td>
</tr>
<tr>
<td>Capstone FS-65</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>1000.00</strong></td>
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</tbody>
</table>

Formulation Attributes

- Solids, % by weight: 25
- pH: 7.95
- Viscosity (CPS): <50
- VOC (g/L): 46.1
- Wt/gal: 8.49

Performance Information

Tests performed on CRS panels (1-mil dry).

- Konig Hardness (seconds):
  - 1 day: 31
  - 7 day: 47

- Cross Hatch Adhesion (7 Day):
  - Dry: 5B
  - Wet: 4B

Supplier Information

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynol 604</td>
<td>Leveling agent</td>
<td>AirProducts</td>
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<tr>
<td>Tego Foamex 825</td>
<td>Defoamer</td>
<td>Evonik</td>
</tr>
</tbody>
</table>
ESSENTIAL R5191
Self-Cross-Linking Acrylic Emulsion

Stain & Chemical Resistance Properties
Tested after 7 days, 1 Hour Test, 1 Hour Recovery

Stain Testing
Coffee ................................................................. No Effect
Red Wine .............................................................. No Effect
Ketch-up ............................................................... No Effect
Mustard .............................................................. Slight Yellowing/Recovers
Iodine 7.5% .......................................................... No Effect

Chemical Testing
Water ................................................................. No Effect
Motor Oil ............................................................. No Effect
NaOH 10% ........................................................... Slight Softening/Recovers
NaCl 10% ............................................................. No Effect
CaCl₂ 10% ............................................................ No Effect
TSP 3% ............................................................... Moderate Softening/Recovers
Ammonia 10% ...................................................... Slight Softening/Recovers
HCl 5% ................................................................. No Effect
Brake fluid .......................................................... No Effect
EtOH 50% ............................................................ Moderate Softening/Recovers
Gas ................................................................. Slight Softening/Recovers
Skydrol .......... Moderate Darkening & Softening/Does Not Recover

Water Resistance Testing – Comparative Study
Procedure – 2 coats of sealer are applied to a red quarry tile. The coats are allowed to dry for 2 hours. After the second coat is dried the tile is partially submersed into water for 16 hours.

The pictures below show the results. As you can see R5191/ALW063 compares very favorably to the typical solvent-based wet look sealer and out performs an existing commercially available water-based sealer.