ArrMuls® 3015
Anionic (-) Slow-Setting Emulsifier
Performance Enhancing Chemistry for Pavement Sealer and Industrial Coating Emulsions

ArrMuls 3015 is a low viscosity, easy to handle asphalt emulsifier chemical used to produce anionic slow-setting emulsions made with low penetration asphalts for compounding to make pavement sealer and industrial coating products. ArrMuls 3015 is also used to produce paving grade slow-setting emulsions (SS-1, SS-1h) conforming to typical specifications, including AASHTO M-140/ASTM D-977.

A preventative maintenance application for pavements with low traffic speeds and tight turning radiiuses, pavement sealers provide an aesthetically pleasing surface and protect the underlying pavement from moisture damage, oxidation, and wear and tear.

Applications:
- Pavement Sealer
- Industrial Coatings
- Tack Coat

Features and Benefits

Easily Emulsify Hard Asphalt
Emulsifies zero penetration asphalt with ease and yields small emulsion particle size

Better Shear Stability
Emulsion remains stable during compounding process and after vigorous mixing and pumping

Faster Emulsion Drying
Emulsion breaks, dries and cures faster. Unlike competing products, does not contain lignin and nonionic surfactants that are slow to break and cure

Better Durability
Better scrub test and Wet Track Abrasion Test performance
Sealer application will not re-emulsify in warm water under repeated shear stress

Easy to Handle
Low viscosity and no need to add caustic when making soap

Compatibility

Asphalt
Easily emulsify all asphalt types including low penetration, paraffin-rich and styrene-butadiene-styrene (SBS) modified

Polymer Modifiers
Compatible with styrene-butadiene rubber (SBR), natural and acrylic latexes

Compounding Additives
Compatible with most clays, fibers, fillers, pigments and other compounding additives

Aggregates
Compatible with damp and dusty aggregates of various types including granite, diabase, basalt, chert, limestone, dolomite, sandstone, slag and silica sand

Usage Recommendations

<table>
<thead>
<tr>
<th>Typical Emulsion Formulation:</th>
<th>ArrMuls 3015, % bwe</th>
<th>Soap pH</th>
<th>ArrMuls D-Tekk, % bwe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pavement Sealer</td>
<td>3.5 – 5.0</td>
<td>as-is</td>
<td>3.0 – 5.0*</td>
</tr>
<tr>
<td>Industrial Coating</td>
<td>3.0 – 5.0</td>
<td>as-is</td>
<td>–</td>
</tr>
<tr>
<td>Tack Coat</td>
<td>2.5 – 4.0</td>
<td>as-is</td>
<td>–</td>
</tr>
</tbody>
</table>

Alkali addition not necessary. ArrMuls 3015 is pre-saponified. Typical total residue of pavement sealer and tack coat emulsion is 58 – 62%. Percentages are by weight of emulsion (bwe).

*Optional, ArrMuls D-Tekk is an emulsion performance improving additive that toughens finished sealer surface and reduces vehicular tracking of sealers and tack coats.
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Chemistry for Pavement Sealer and Industrial Coating Emulsions

Availability

ArrMuls 3015 is available for shipment in bulk by rail car and tank truck. Packaged quantities are available in 275 gal/1,000 L IBC totes (2,300 lb/1,043.3 kg net weight) and 55 gal/208 L metal drums (450 lb/204.1 kg net weight).

Physical Characteristics

<table>
<thead>
<tr>
<th>Property:</th>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance, 77°F (25°C)</td>
<td>Dark-Colored Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Resinous</td>
</tr>
<tr>
<td>Density, 77°F (25°C)</td>
<td>9.20 lb/gal (1.10 kg/L)</td>
</tr>
<tr>
<td>Viscosity, 77°F (25°C)</td>
<td>1,400 cP</td>
</tr>
<tr>
<td>Pour Point</td>
<td>&lt; 50°F (10°C)</td>
</tr>
<tr>
<td>TSCA Inventory</td>
<td>Listed</td>
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<tr>
<td>C.A.S. Number</td>
<td>Proprietary</td>
</tr>
</tbody>
</table>

The density and viscosity data reported are typical and not specifications. Typical ranges for density and viscosity values are ± 2% and ± 20%.

Handling and Storage

Always handle ArrMuls products in accordance with Safety Data Sheet (SDS) and proper safety procedures. Avoid product contamination with other materials. Do not heat product in excess of 140°F (60°C) for prolonged periods. Recommended product handling temperature range is 70 – 110°F (21 – 43°C).

Technical Support

To request additional product information, contact your regional Road Science representative. You can also contact us at 918-960-3800 or customerservice@roadscience.net, or visit our website at www.roadscience.net.

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