ArrMuls 1315 is an asphalt emulsifier chemical used to produce anionic slow-setting (SS-1, SS-1h) emulsions conforming to typical specifications, including AASHTO M-140/ASTM D-977. SS emulsions have the highest degree of stability and are used in a variety of asphalt pavement and industrial applications.

**Applications:**
- Tack Coat
- Fog Seal
- Mixing-Grade
- Pavement Sealer
- Industrial Coatings

**Features and Benefits:**

**Outstanding Emulsion Stability**
Best-in-class in producing pump, sieve and settlement stable dilute and non-dilute emulsions

**Faster Emulsion Drying Time**
Faster tack coat and sealer drying and curing times compared to competing products means faster paving

**Protection Against Foul Odor**
Non-lignin based chemistry avoids biological growth and resultant odor issues in emulsions

**High Efficiency**
70% active, significantly lower dosage requirements and lower freight expenses

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

**Compatibility:**

- **Asphalt**
  Easily emulsify all asphalt types including paraffin-rich, low penetration and SBS-modified

- **Polymer Modifiers**
  Compatible with SBR and acrylic latexes

- **Compounding Additives**
  Compatible with various clays, fibers, pigments and other compounding additives used in producing pavement sealer and industrial coating emulsions

- **Aggregates**
  Easily mixes and is compatible with RAP, limestone, granite and most other types of aggregate and granular materials, even when damp and/or dusty

**Usage Recommendations:**

**Typical Emulsion Formulation:**

**Tack Coat, Fog Seal, Mixing-Grade:**
- 1.0 – 1.3% ArrMuls 1315

**Pavement Sealer, Industrial Coatings:**
- 1.4 – 1.6% ArrMuls 1315

No caustic addition necessary, use as-is. Typical asphalt content is 60 – 62%. Percentages are by weight of emulsion.
ArrMuls® 1315
Anionic (-) Slow-Setting Emulsifier
Innovative Chemistry Dedicated to Improve Emulsion Stability and Tack Coat Drying Time

Availability:
ArrMuls 1315 is available for shipment in bulk by railcar and tank truck. Packaged quantities are available in 275 gal/1,041 L IBC totes (2,400 lb/1,088.6 kg net weight) and 55 gal/208 L metal drums (480 lb/217.7 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 Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Resinous</td>
</tr>
<tr>
<td>Density, 77°F (25°C)</td>
<td>9.28 lbs/gal (1.11 kg/L)</td>
</tr>
<tr>
<td>Viscosity, 77°F (25°C)</td>
<td>1,100 cps</td>
</tr>
<tr>
<td>Pour Point</td>
<td>&lt; 35°F (2°C)</td>
</tr>
<tr>
<td>Solids</td>
<td>70%</td>
</tr>
<tr>
<td>Saponification</td>
<td>Sodium Hydroxide</td>
</tr>
<tr>
<td>TSCA Inventory</td>
<td>Listed</td>
</tr>
<tr>
<td>DSL 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 the safety data sheet (SDS) and proper safety procedures. Avoid product contamination with other materials. Do not heat product in excess of 120°F (49°C) for prolonged periods. Recommended product storage and handling temperature range is 70 – 120°F (21 – 49°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.