AD-HERE® ULTRA 1
Asphalt Mix Performance-Improving Additive

TECHNICAL DATA SHEET

COMPACtion AID AND LIQUID ANTI-STRIP IN ONE

AD-Here ULTRA 1 is an asphalt additive that allows for easier field compaction and stronger adhesion of the asphalt binder to aggregate. It safeguards pavements against destructive forces such as traffic loading, water intrusion and oxidation, leading to reduced pothole formation, cracking and rutting for safer, smoother and longer-lasting roads. AD-Here ULTRA 1 is formulated to minimize smoke and odor for better plant personnel and paving crew comfort, and is used to design mixes that conform to typical specifications including AASHTO T283: Method of Test for Resistance of Compacted Bituminous Mixture to Moisture Induced Damage, AASHTO T324: Method of Test for Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA) and AASHTO R35: Standard Practice for Superpave Volumetric Design.

APPLICATIONS

- Asphalt Paving

FEATURES

- EASIER FIELD COMPACTION
  Enables increased mat density with fewer roller passes, even with high recycled asphalt pavement (RAP) mixes

- RELIABLE ANTI-STRIPPING EFFECTIVENESS
  Passes tensile strength ratio (TSR) and Hamburg Wheel Tracking tests with wide variety of asphalt and aggregate combinations

- LOW ODOR AND LOW SMOKE
  Improves plant personnel and paving crew comfort

- BETTER MIX WORKABILITY
  Enables easier hand-work in paving applications

- HEAT STABILITY
  Remains effective several weeks in hot asphalt

COMPATIBILITY

- ASPHALT
  Compatible with most asphalts including those modified with styrene-butadiene-styrene (SBS), styrene-butadiene rubber (SBR), ethylene-vinyl acetate (EVA) polymers, ground tire rubber (GTR) and recycled asphalt shingles (RAS)

- AGGREGATES
  Compatible with various aggregate types including granite, diabase, diorite, basalt, gabbro, rhyolite, andesite, dacite, chert, quartzite, gneiss, limestone, dolomite, marble, sandstone, natural sand and gravel, slag and RAP

USE AD-HERE ULTRA 1 WHEN YOU NEED:

- Faster and easier compaction
- To pass TSR and Hamburg tests with challenging asphalt and aggregate combinations
- Reduced smoke and odor at the terminal, mix plant or jobsite

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OPTIONS FOR ADDING AD-HERE ULTRA 1 TO ASPHALT:

1. Add to asphalt storage tank and agitate mechanically or through pump circulation
2. Add at asphalt terminal by injecting into asphalt line as transport tanker is being charged
3. Add at asphalt mix plant by in-line injecting into the asphalt line (continuous plant) or weigh hopper (batch plant)

NEAT AND MODIFIED ASPHALTS:

- 0.25 – 0.75% by weight of total asphalt in mix
- Usage rate should be determined by user based on degree of aggregate coating and moisture sensitivity testing at desired production temperature

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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>Amine</td>
</tr>
<tr>
<td>Density, 77 °F (25 °C)</td>
<td>8.1 lb/gal</td>
</tr>
<tr>
<td>Viscosity, 77 °F (25 °C)</td>
<td>1,650 cP</td>
</tr>
<tr>
<td>TSCA Inventory</td>
<td>Listed</td>
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<tr>
<td>C.A.S. Number</td>
<td>Proprietary</td>
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</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 AD-here ULTRA 1 in accordance with Safety Data Sheet (SDS) and Road Science Asphalt Additives Handling and Storage Guidelines document. Avoid product contamination with other materials. Do not store product in excess of 140 °F (60 °C) for prolonged periods. Recommended product handling temperature range is 80 – 120 °F (27 – 50 °C).

AVAILABILITY

AD-here ULTRA 1 is available for shipment in bulk by rail car and tank truck. Packaged quantities are available in 275 gal/1,000 L IBC totes (2,100 lb/952.5 kg net weight) and 55 gal/208 L steel drums (420 lb/190.5 kg net weight).

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.