In order to grow commerce and ensure ease of travel, businesses and the motorist public expect government agencies, asphalt producers and contractors to build long-lasting and safer roads quickly with minimal user disruption. AD-here ULTRA additives extend pavement life by enabling easier and faster field compaction. By creating stronger adhesion of the asphalt binder to aggregate, they safeguard against destructive pavement forces such as traffic loading, water intrusion and oxidation. The result is fewer potholes and reduced rutting, ensuring safer, smoother and longer-lasting roads for years to come.

The AD-here ULTRA additive line provides many different feature options based on specific customer needs. All AD-here ULTRA products are cost-effective versus other anti-stripping technologies and are easy to work with. Low-odor and odorless options are available to reduce odor and smoke typical of competing additives which can be problematic for environmental, health and safety regulatory compliance. These options also promote better plant personnel and paving crew comfort.

**BENEFITS**

- **FASTER AND EASIER PAVING**
  - Makes field compaction easier enabling improved mat density with fewer roller passes, even with high recycled asphalt pavement mixes
  - Improves mix workability and enables easier hand-work

- **IMPROVED PROFITABILITY**
  - Extends paving season and lengthens haul distance
  - Facilitates utilization of increased amounts of recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS)

- **SAFER, SMOOTHER, LONGER-LASTING ROADS**
  - Extends pavement life by promoting stronger chemical adhesion of asphalt to aggregate
  - Protects pavement from stripping and moisture damage caused distresses
  - Makes pavements safer by protecting against rutting and pothole formation
  - Produces smoother pavements for improved ride quality

- **CUSTOMIZED SOLUTIONS**
  - Products available with chemistry engineered specifically for certain aggregate types and geographic regions

- **IMPROVED WORKER SAFETY AND COMFORT**
  - Non-hazardous and odorless options available for improved plant personnel and paving crew safety and comfort
MARKET APPLICATIONS

ASPHALT PAVING USING:
- Non-modified asphalts
- Modified asphalts including those modified with:
  - Styrene-butadiene-styrene (SBS)
  - Styrene-butadiene rubber (SBR)
  - Ethylene-vinyl acetate (EVA)
  - Ground tire rubber (GTR)
  - Polyphosphoric Acid (PPA)

AGGREGATE TYPES INCLUDING:
- Granite
- Diabase
- Diorite
- Basalt
- Gabbro
- Rhyolite
- Andesite
- Dacite
- Chert
- Marble
- Quartzite
- Gneiss
- Natural Sand and Gravel
- Limestone
- Dolomite
- Sandstone
- Slag
- RAP

AD-HERE ULTRA FEATURES

<table>
<thead>
<tr>
<th>Comparison Criteria</th>
<th>AD-HERE ULTRA 1</th>
<th>AD-HERE ULTRA SE1</th>
<th>AD-HERE ULTRA SE2</th>
<th>AD-HERE ULTRA CA</th>
<th>AD-HERE ULTRA P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makes compaction easier and improves workability</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Protects against moisture damage and stripping</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Passes adhesion tests with challenging asphalts and aggregates</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Compatible with PPA-modified asphalt</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Efficacy with prolonged storage in asphalt</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Low odor, low smoke</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odorless, smokeless</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-hazardous</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No heated storage required</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Engineered for igneous and metamorphic paving aggregates of the Western United States</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Engineered for natural sand and gravel aggregates of the United States</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

THE ROAD SCIENCE ADVANTAGE

ArrMaz’s Road Science division is a leader in the development of asphalt additives, emulsifiers, and paving and recycling system technologies for the asphalt industry worldwide. Our offerings span the entire customer value chain from producing key chemical components for asphalt refineries, terminals, emulsion plants and hot mix asphalt (HMA) plants, to providing laboratory and field engineering support of pavement applications. Road Science delivers responsive, comprehensive and dependable customer support focused on helping our customers succeed. Through our experienced staff of professionals and world-class American Association of State Highway and Transportation Officials (AASHTO) resource accredited laboratory, we work alongside our customers to:

- Improve product quality and consistency
- Solve product problems
- Improve product performance
- Increase profitability
- Bring new products to market
- Increase operational efficiency

Contact Road Science today and learn how AD-HERE ULTRA can help you make the grade.
Call 918-960-3800, email customerservice@roadscience.net or visit our website at roadscience.net for further information.

© 2018 ArrMaz Products, LP. All rights reserved. This material may not be reproduced, displayed, modified or distributed without the express prior written permission of the copyright holder.