REVIVE® 1114
Asphalt Rejuvenating Additive

CHEMISTRY FOR EASIER AND MORE EFFICIENT USE OF RECYCLED ASPHALT PAVEMENT (RAP)

Revive 1114 is an additive added to virgin asphalt to improve the ease and efficiency with which highly oxidized asphalt is removed from RAP and reincorporated back into the new mix and pavement. Revive 1114 is used to facilitate higher RAP usage levels without compromising asphalt mix performance.

Revive 1114 is used to engineer pavements that conform to typical specifications including AASHTO R35: Standard Practice for Superpave Volumetric Design and AASHTO T322: Standard Method of Test for Determining the Creep Compliance and Strength of Hot-Mix Asphalt (HMA) Using the Indirect Tensile Test Device.

APPLICATIONS
Asphalt Paving

FEATURES
EFFICIENT RAP UTILIZATION
Chemically removes oxidized asphalt from RAP
Makes RAP asphalt and virgin asphalt compatible and homogeneous resulting in consistent PG grading
Does not negatively impact high temperature rutting resistance
Improves low temperature crack resistance by lowering critical cracking temperature to levels found in low RAP mixes

SAVES MONEY
Reduces mix cost by enabling higher RAP utilization allowing for less virgin aggregate and asphalt usage
Compared to using softer asphalts and fluxes, ensures more consistent supply with no need for additional storage tanks and associated heating costs, and reduces working capital needed for asphalt inventory

EASIER MIX PLACEMENT
Provides improved mix workability yielding better mat smoothness with fewer roller passes and easier hand-work

SAFER
Non-hazardous with a high flash point and no polyaromatic hydrocarbons (PAHs)

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)

ANTI-STRIPPING AGENTS AND ADHESION PROMOTERS
Compatible with AD-here®, NovaGrip™ and KO-here® additives

USE REVIVE 1114 WHEN YOU NEED:
• Easier RAP utilization without performance problems
• Better profitability
• Easier constructability using RAP

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USAGE RECOMMENDATIONS

NEAT AND POLYMER-MODIFIED ASPHALT:

- 0.5–2.75% by weight of total asphalt in mix
- Usage rate should be determined by user based on the amount and stiffness of RAP incorporated into the mix, as well as field (compactive effort) and lab performance AASHTO T322 (Critical Cracking, Indirect Tensile Strength)

OPTIONS FOR ADDING REVIVE 1114 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 by in-line injecting into the asphalt line between the asphalt flow meter and the plant injection point, preferably after flowing through an in-line static mixer

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>Mild Hydrocarbon</td>
</tr>
<tr>
<td>Density, 77 °F (25 °C)</td>
<td>7.6 lb/gal (0.9 kg/L)</td>
</tr>
<tr>
<td>Viscosity, 77 °F (25 °C)</td>
<td>100 cP</td>
</tr>
<tr>
<td>TSCA Inventory</td>
<td>Listed</td>
</tr>
<tr>
<td>DSL Inventory</td>
<td>Listed</td>
</tr>
<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 Revive products in accordance with Safety Data Sheet (SDS) and Road Science Asphalt Additives Handling and Storage Guidelines document. Avoid product contamination with other materials. Recommended handling temperature range is 32–120 °F (0–50 °C).

AVAILABILITY

Revive 1114 is available in 275 gal/1,000 L IBC totes (1,950 lb/884.5 kg net weight) and 55 gal/208 L metal drums (400 lb/181.4 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.