



# REVIVE™ RA

Recycled Bitumen Rejuvenator

## TECHNICAL DATA SHEET

### CHEMISTRY FOR EASIER AND SMARTER USE OF RECYCLED ASPHALT PAVEMENT (RAP)

Revive RA is an additive added to virgin bitumen to improve the ease and efficiency in which highly oxidized bitumen is extracted from RAP, and reincorporated back into the new mix and pavement. Revive RA is used to facilitate higher RAP usage levels without compromising asphalt performance. Revive RA is used to engineer asphalts 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

#### USE REVIVE RA WHEN YOU NEED:

- Easier RAP utilization without performance and construction headaches
- Easier compaction of high RAP asphalt for density bonus payments
- Better profitability and more RAP utilization
- Better efficiency in utilization of bitumen tanks

### FEATURES AND BENEFITS

#### BETTER EFFICIENCY

Chemically works to extract higher amounts of oxidized bitumen from the RAP

Binds extracted bitumen and virgin bitumen together for compatibility and homogeneity, resulting in consistently performing asphalt

Improves top and bottom PG temperature grades of bitumen so that the mix will have better in place stiffness without sacrificing cold temperature durability

#### EASIER COMPACTION

Allows easier compaction and better mat density with fewer roller passes. Adds workability to the mix for easier hand-work

#### SAVE MONEY

Enables higher RAP utilization and less virgin bitumen usage without construction or performance problems

#### BETTER LOW TEMPERATURE ASPHALT PERFORMANCE

Lowers critical cracking temperature of asphalt back to levels found in low RAP mixes by reviving the highly oxidized RAP

Gives contractors virgin mix performance with all the cost savings of a high RAP mix

### COMPATIBILITY

#### BITUMEN

Compatible with most bitumen including those modified with styrene-butadiene-styrene (SBS), styrene-butadiene rubber (SBR), and ethylene-vinyl acetate (EVA) polymers

## USAGE RECOMMENDATIONS

### NEAT AND POLYMER-MODIFIED BITUMEN:

- 0.5–2.75% by weight of total bitumen 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)

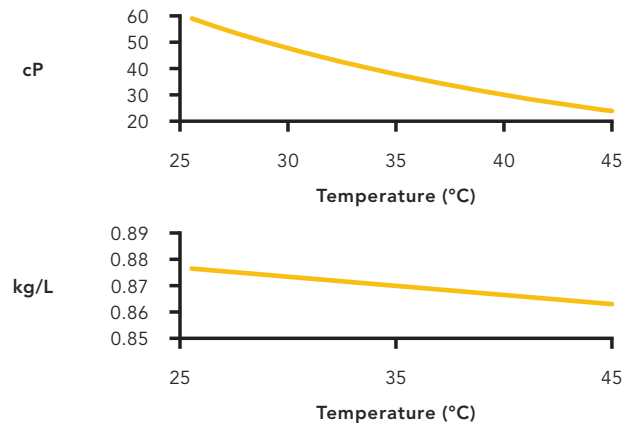
### OPTIONS FOR ADDING REVIVE RA TO BITUMEN:

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

## PHYSICAL CHARACTERISTICS

Property	Description
Appearance, 25 °C	Dark-Colored Liquid
Odor	Hydrocarbon
Density, 25 °C	0.89 kg/L
Viscosity, 25 °C	60 cP
REACH	Compliant
C.A.S. Number	Proprietary

\*The density and viscosity data reported are typical and not specifications. Typical ranges for density and viscosity values are  $\pm 2\%$  and  $\pm 20\%$ .



## HANDLING AND STORAGE

Always handle Revive RA 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 0–40 °C.

## AVAILABILITY

Revive RA is available in 1,000 L IBC totes (884.5 kg net weight) and 208 L metal drums (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](mailto:customerservice@roadscience.net), or visit our website at [www.roadscience.net](http://www.roadscience.net).

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