

## PRODUCT DATA BULLETIN

### Description and Typical Applications

INDULIN AA-89 is a 100% active liquid, to soft paste, asphalt emulsifier used in production of rapid-set and medium-set cationic emulsions. The product is easy to dissolve in water at 50°C (122°F) during emulsifier solution production. This specially formulated emulsifier builds high emulsion viscosity, and is effective across a range of dosage rates. INDULIN AA-89 will give high demulsibility, even at higher surfactant use levels typically needed to emulsify polymer-modified asphalts. Emulsions made with INDULIN AA-89 are compatible with a wide range of aggregates, from silicate through limestone and dolomite, and demonstrate rapid curing properties in properly formulated chip seal or surface dressing formulations.

### Typical Properties

Physical form	Liquid to soft paste
Density, g/ml (lbs/gal), 25°C (77°F)	0.87 (7.23)
Specific gravity, 25°C (77°F)	0.87
Flash Point, °C (°F)	>93 (>200)
pH, 5% aqueous, w/v, 25°C (77°F)	9 – 11

### Usage

Gently heat INDULIN AA-89 in a hot box or steam box until completely liquid. If a drum heater must be used, it should incorporate the largest heating area possible to avoid localized overheating (which can degrade the quality of the emulsifier). Add the INDULIN AA-89 to the calculated amount of water heated to 45 – 55°C (113 – 131°F). Then add the amount of hydrochloric acid necessary to bring the solution to the desired pH, typically 2 – 3 pH. An alternate method of preparing the emulsifier solution is to add approximately 90% of the acid needed to the 50°C (122°F) water, and then add INDULIN AA-89 to the acidified water. Add additional acid to adjust the pH to the desired level. Normal use levels of INDULIN AA-89 range from 0.20 - 0.30% for CRS and polymer modified CRS, and 0.4 – 0.6% for CMS emulsions. Alternately, for CMS emulsion for dense graded aggregates, INDULIN AA-89 can also be used in combination with CSS emulsifiers INDULIN AA-22 or AA-57 at a 0.25/0.25 – 0.30/0.30% use level to achieve sufficient mix time.

### Storage

INDULIN AA-89 may be stored at ambient temperatures. If necessary, the product may be gently heated to 45 – 50°C (113 – 122°F) to facilitate pumping, but should not be stored in excess of 60°C (140°F) for a prolonged period. The maximum recommended temperature for storage is 70°C (158°F). INDULIN AA-89 should be stored in closed containers or in vented bulk storage.

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### MeadWestvaco Corporation

Asphalt Innovations  
PO Box 118005  
Charleston, SC 29423-8005  
Tel: +1 843 740 2236  
Fax: +1 843 740 2147  
Email: asphalt.innovations@meadwestvaco.com  
Website: www.meadwestvaco.com  
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**Safety:** Always refer to the Material Safety Data Sheet for detailed information on shipping, handling, storage, and use.

**Important:** The information provided herein is believed to be accurate and reliable, but is presented without guarantee on the part of MeadWestvaco Corporation. Further, nothing contained herein shall be taken as an inducement to violate any patent rights.

**Shipping**

Freight Classification: Corrosive liquid, basic, organic, n.o.s., UN 3267, hazard class 8, packing group III

Availability: Tank car, tank truck, 55-gal. non-returnable metal drums [370-lb. (168.2-kg.) net weight]

Shipping Point: Charleston, SC, USA

**INDULIN AA-89****CAS Registry No.: Components Listed in TSCA Inventory****Revised April 17, 2006**

**MeadWestvaco Corporation**  
Asphalt Innovations™  
PO Box 118005  
Charleston, SC 29423-8005  
Tel: +1 843 740 2236 Fax: +1 843 740 2147  
E-mail: [asphalt.innovations@meadwestvaco.com](mailto:asphalt.innovations@meadwestvaco.com)