

## Silbreak™ 321

### Silbreak\* 321

#### Description

Silbreak 321 silicone demulsifier is an excellent candidate to consider for use in effectively breaking water-in-oil emulsions, particularly those associated with crude oil production. It can also be effective in helping provide release and dust control when used on conveyor belts of sulfur recovery units.

Silbreak 321 silicone demulsifier is based on a modified polydimethylsiloxane that combines in a single molecule chemical group with different affinities for the water and oil phases thereby achieving remarkable interfacial activity that can result in efficient demulsification. Further, the balance of silicone moieties and organic groups can assist with release and dust control during pelletization and use of sulfur.

#### Key Features and Benefits

- Powerful demulsification effect, particularly when combined with polyols
- Helps provide foam control to oil based systems
- Release and antidusting effect
- Effective at low dosage levels

#### Typical Physical Properties

| Property           | Unit                             | Value       |
|--------------------|----------------------------------|-------------|
| Appearance         | –                                | Clear, pale |
| RSN <sup>(1)</sup> | –                                | 13.2        |
| Density at 25°C    | g•cm <sup>-3</sup>               | 1.03        |
| Viscosity at 20°C  | mm <sup>2</sup> •s <sup>-1</sup> | 2000        |

|  |    |   |
|--|----|---|
| Flash Point Pensky-Martens<br>Closed Cup ASTM D-93 | °C | 135   |
| Solubility   | –  | Aromatic hydrocarbons,<br>higher alcohols and water<br>(steam condensate) |

The RSN value was determined experimentally.

1) Established using toluene/dimethoxyethane solution as described in the reference J. Wu et al. Colloids and Surfaces A: 232 (2004) 229-237.

Typical data are average data and actual values may vary.  
Typical data shall not be used as product specifications.

## Product Usage

### Demulsification

As with many Silbreak demulsifiers, Silbreak 321 silicone demulsifier is not intended to replace organic demulsifiers. Rather it should be blended with organic demulsifiers at levels ranging from 2 to 25% to boost the effect or clean up the separated water.

Silbreak 321 silicone demulsifier generally shows strong synergies with organic polyols. At levels as low as 2%, it can contribute to the clarity of the separated water. It is particularly effective on medium and heavy crudes and, when combined with polyols, it generally shows demulsification activity at lower temperatures.

### Release / Antidusting

Silbreak 321 silicone demulsifier can typically act as a release and antidusting agent during sulfur pelletization or pastillation to prevent pastille damage during discharge and hence produce premium quality pastilles. It may also contribute to a better slurry formation during the Sul-Flow process.

Silbreak 321 silicone demulsifier is soluble in water at temperatures below 40°C. It is recommended that a 5-8 weight % solution of Silbreak 321 silicone demulsifier be prepared in water or steam condensate and applied continuously, best as a thin film, by means of a roller system or spray, onto the steel belt coolers before the dropper. Effective release, better pellet shape and improved separation from the conveyor belt

may be observed even at high belt speeds, with low and medium viscosity molten sulfur liquids. If the Silbreak 321 silicone demulsifier solution is to be stored for a period longer than two days, it is recommended that a biocide be added to prevent loss of performance.

### **Patent Status**

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

### **Product Safety, Handling and Storage**

Silbreak 321 silicone demulsifier is best stored at temperatures between 0° and 35°C to facilitate ease of handling, but storage at lower or higher temperatures will not typically affect its subsequent performance.

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at [www.momentive.com](http://www.momentive.com) or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

### **Limitations**

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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