

Calfoam 70 Series High Active Alcohol Sulfates and Ether Sulfates

Summary:

Pilot introduces the Calfoam 70 Series Alcohol Sulfates and Ether Sulfates. At approximately 70% active, these surfactants are substantially more concentrated versions of the traditional sulfates used in the US, which are typically sold at 26 - 30 % active levels. Unlike the 60% Ether Sulfates used in some applications, Calfoam 70 series products contain no solvents, hydrotropes or other viscosity modifiers. They are pumpable fluids and find application in the full range of Personal Care, Household and Industrial and Institutional Cleaning markets, where the 30% and 60% products are currently used. The 70 series products provide the formulator with additional flexibility, specifically with respect to concentrated end products. Low 1, 4 dioxane versions of the products will also be available.

Products:

Building on a reputation for proprietary anionic manufacturing technology, Pilot enters the high active market as part of a long term manufacturing and marketing agreement with Albright and Wilson, the UK multinational surfactant company. Products are manufactured at Pilot's new state of the art continuous sulfation plant in Cincinnati. Products include Sodium Lauryl Ether Sulfates (with 1, 2 and 3 moles of ethylene oxide), the corresponding Ammonium salts and Ammonium Lauryl Sulfate. Multi-component high active performance concentrate products are also under development.

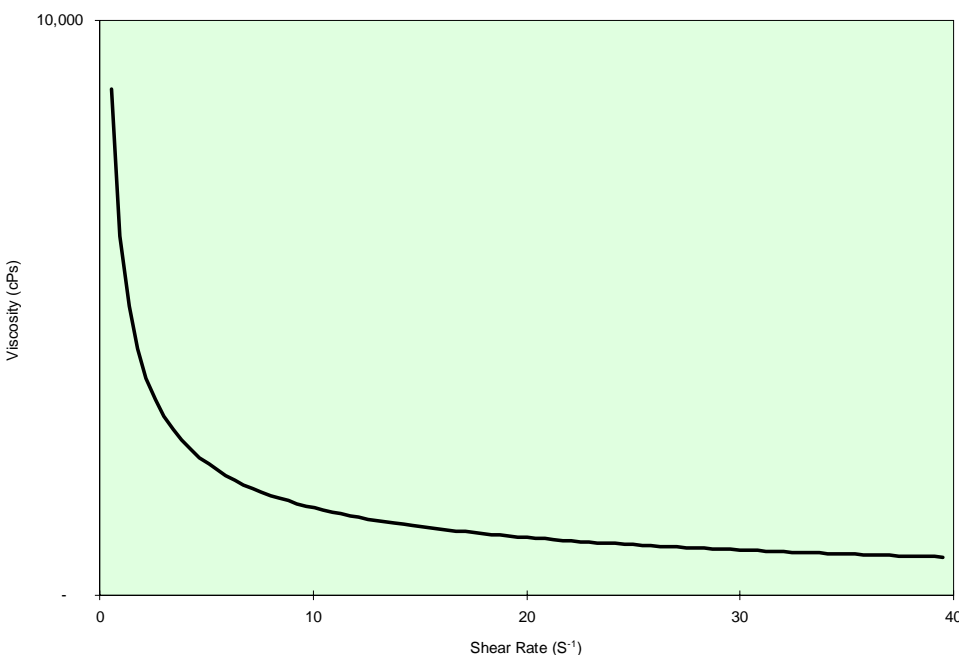
Advantages:

The advantages of a more concentrated surfactant fall into two categories, Logistical and Technical. Logistically, on a "per pound of active" basis, transportation costs and storage requirements are reduced compared to the traditional 30% products. Also, per pound of active, there is less labor involved in product handling, incoming quality control and the administration of ordering and invoice processing. Technically, the Calfoam 70 series products enable much greater formulation flexibility by not forcing the formulator to deal with two and a half pounds of water for every pound of active, as is the case with the 30% products. Also the 70% products are much more resistant to biological attack and require no preservation when stored at incoming active levels. The reduction in the number of bulk loads for a given active requirement means less batch to batch production variation and greater production efficiency.

Handling:

The Calfoam 70 series sulfates are translucent fluids with higher apparent viscosity than the 30% analogues. The viscosities are highly shear dependent as well as being affected by degree of aeration. Increasing shear and eliminating aeration work toward lowering product viscosity. The graph below illustrates how shear may be expected to affect viscosity of a 70% product. As a rule of thumb, for suitable pump and piping arrangements, an apparent viscosity of 2,500 to 3,500 centipoise may be assumed.

Effect of Shear on Viscosity of Deaerated 70% Sodium Lauryl Ether Sulfate at 25°C



Set points of most of the 70% products are typically in the range 4-14 °C. Ammonium Lauryl Sulfate is an exception at 25 °C. It is recommended that the products be stored at temperatures at least 5 °C above the relevant set points to ensure pumpability. As with all sulfates, high temperatures should be avoided and should generally not exceed 40 °C for the 70% products. The 70% products have poor heat transfer characteristics and care should be taken to avoid local hotspots during heating. Temperature maintenance should be via media controlled at no higher than 40 °C. Steam heating should not be used. See the High Active Handling Advisory for more information.

Processing:

Manufacturing finished products such as shampoos, liquid soaps and detergents from the 70% products is straightforward, providing the surfactant is added to the water to dilute; never the other way round. In a continuous dilution system, the ratio of 70% surfactant to water should be such that an active level of 23 - 27 % on dilution is not exceeded. See the High Active Handling Advisory for more information.

Availability:

Calfoam 70 Series products are available in bulk from Middletown, Ohio. Minimum order is 40,000 pounds. Drums are available from all plants. Net drum weights are 400 to 450 pounds depending on the product.

For More Detailed Information:

Please consult Pilot Chemical for more information and preliminary evaluation samples.

**For more information and samples, contact Pilot Chemical
1.800.70.PILOT - info@pilotchemical.com - www.pilotchemical.com**

The information provided is current as of the date of publication as shown by the document control number.