



CHEM GUARD S-216M

High Performance Cationic Fluorosurfactant

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Product Description

CHEM GUARD S-216M is a special non-flammable blend of fluoro/silicone surfactants with a net cationic nature. It provides surface tensions as low as 16 dynes/cm in water at low concentrations and is also surface active in many solvents. This product has excellent dynamic surface tension properties, allowing rapid attainment of low equilibrium surface tensions. Due to its exceptional surface activity, Chemguard S-216M imparts excellent wetting; spreading, leveling and flow control properties to various types of water-based as well as solvent based coating formulations. Its exceptionally low foaming characteristics in conjunction with its low surface tension makes it ideal for water-based coating formulations designed for difficult to coat, low surface tension substrates. In addition, Chemguard S-216M is non-flammable and much safer to use in production.

Chemguard Fluorosurfactants

- Are effective at low concentrations of 50-1000 ppm, depending on the application.
- Are further activated with addition of hydrocarbon and/or silicone surfactants.
- If replacing another product, begin evaluating at the same concentration and either increase or decrease until the desired performance is obtained.
- Chemguard Fluorosurfactants do not contain PFOS, PFOA or derivatives that decompose them.
- All perfluoro- intermediates are derived from the telomerization process.

Typical Properties¹

Appearance	Clear liquid
Ionic Character	Blend of ionics/nonionics, Slightly Cationic
Composition	Approx. 45% actives, 10% hexylene glycol, and 45% water
Density	1.14 g/ml at 25°C
Flash Point	>95°C, Pensky-Martens, closed cup
Viscosity	50 cP @ 25°C
pH	7.0

¹ Not for specification purposes.

Typical Applications

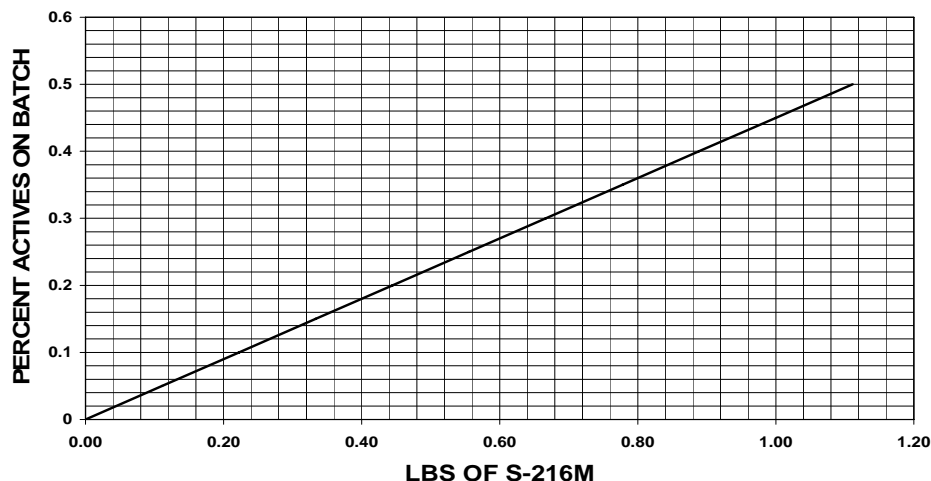
Chemguard S-216M is a dilute solution composed of 45% active fluorosurfactant in a water and solvent miscible diluent. Typical uses include paints and coatings, adhesives, inks, waxes, polishes, caulks, and for applications requiring low surface tension.

Fluorosurfactants such as Chemguard S-216M are much more chemically stable than typical hydrocarbon surfactants, particularly in the presence of acids, alkalis, or heat.

Recommended application rates depend on the formulation makeup but typical levels of 0.05% to 0.3% are common.

The charts below will aid in determining the amount of Chemguard S-216M that is required for a targeted level of active surfactant concentration to achieve the degree of surface tension reduction. The ideal method for determining the proper level is to screen several ranges of concentrations to achieve the desired effect on the surface tension and wetting action.

ADDITION RATE OF S-216M FOR 100 LB. BATCH



Solubility

Chemguard S-216M is soluble in water and most organic solvents. The chart below is an example of the solubility of S-216M in many solvent systems. Chemguard can assist in determining solubility in any system.

Solvent	Grams of Chemguard S-216M/ 100 grams of solvent
Distilled Water	Dispersible
Isopropanol	~6%
1:1 Water/Isopropanol	Dispersible
Methyl Alcohol	~6%
Methyl propyl ketone	Insoluble
Butyl carbitol ¹	~6%

All values measured at 25°C

¹ Trademark of Union Carbide Corporation

Dynamic² / Equilibrium³ Surface Tension in dynes/cm

Percent Active in Distilled Water	at one second	at seven seconds	At equilibrium
0.1	16.7	16.5	16.4
0.01	17.1	16.7	16.4

² Dynamic surface tension measured Kruss tensitometer K100

³ Equilibrium surface tension measured by Wilhelmy plate.

Storage and Shelf Life

Chemguard S-216M should be stored between 10°C and 50°C. Some solids begin to separate at temperatures below 8°C over time. If frozen or if solids separate, warm to room temperature before use. Freezing and thawing will not affect the properties or performance.

Shelf life is at least two years if stored tightly sealed in the original container at temperatures below 50°C (151°F).

Packaging

S-216M is offered in the following sizes:

8 lb. Plastic Jug

40 lb. Plastic Pail

440 lb. Plastic Drum

Health and Safety

Chemguard does not recommend this product for use in applications involving repeated exposure to skin contact, inhalation, or ingestion. This product is not intended to be used for medical, cosmetic, food or pharmaceutical applications.

Chemguard Fluorosurfactants do not contain PFOS, PFOA or derivatives that decompose them. All perfluoro-intermediates are derived from the telomerization process.

Please refer to the material safety data sheet (MSDS) for recommended disposal, handling, and protection information.

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