



CHEMGUARD S-111LF

High Performance Amphoteric Fluorosurfactant

CHEMGUARD 204 South 6th Ave. Mansfield, Texas 76063 USA • 817-473-9964 • Fax: 817-473-0606 • www.chemguard.com

Product Description

Chemguard S-111LF is a low foaming amphoteric fluorosurfactant of the alkyl amine oxide type. It provides surface tensions as low as 15 dynes/cm in water at very low concentrations. It also has excellent dynamic surface tension properties, allowing for rapid attainment of low equilibrium surface tensions. Chemguard S-111LF imparts excellent wetting, spreading, leveling, and flow control properties on various types of water-based as well as solvent-based systems. Its extremely low equilibrium surface tension in conjunction with low foaming and excellent dynamic surface tension properties makes it ideal for coating formulations designed for difficult to coat, low surface energy substrates. Its amphoteric nature allows S-111LF to be unsusceptible to the differences in pH, which provides excellent hard water resistance.

Attributes

- Provides low surface tension at low concentrations
- Excellent dynamic surface tension properties
- Excellent for wetting difficult to coat surfaces
- Low foaming
- Provides excellent hard water resistance
- Works in water-based and solvent-based systems
- More chemically stable than typical hydrocarbon surfactants

Typical Properties¹

Appearance	Clear, light amber liquid	
Ionic Character	Amphoteric	
Percent Solids (Actives)	30%	
Diluent Composition	Water/Diethylene Glycol n-butyl Ether/Propylene Glycol 40:15:10	
Density (25°C)	1.22 g/ml	
Flash Point (Pensky-Martens, closed cup)	>93°C	
pH	6.0-8.5	
Refractive Index (at 25°C)	1.373	
	0.01% Solids	17
	0.1% Solids	15

¹Not for specification purposes.

Typical Applications

Chemguard S-111LF is a dilute solution composed of 30% active fluorosurfactant in a water and solvent miscible diluent. Typical uses include leveling and anti-static agents for photographic coatings, floor polishes, paints and coatings, adhesives, inks, waxes, caulks, pickling and plating baths, and in solvent extraction of metals in aqueous solutions. Applications of Chemguard S-111LF are generally those in which typical hydrocarbon surfactants are found to be inadequate.

Fluorosurfactants such as Chemguard S-111LF 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 0.4% are common. 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.

Solubility

Chemguard S-111LF is soluble in water and most organic solvents. The chart below is an example of the solubility of S-111LF in many solvent systems. Chemguard can assist in determining solubility in any system.

Solvent	Grams of Chemguard S-111LF/ 100 grams of solvent
Distilled Water	>2
Isopropanol	>2
1:1 Water/Isopropanol	>2
Methyl Alcohol	>2

All values measured at 25°C

Storage and Shelf Life

Chemguard S-111LF begins to solidify at temperatures below 10°C. **If frozen or if separation occurs, warm to room temperature and stir well before use.** Freezing and thawing will not affect the properties or performance.

Shelf life is at least one year if stored tightly sealed in the original container at temperatures below 49°C (149°F).

Health and Safety

Chemguard S-111LF Fluorosurfactant is intended for use in contained and non-dispersive applications. 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 are based on telomer synthesis. No PFOS, no PFOA, and no derivatives that decompose to them are used in the manufacturing process. Chemguard S-111LF is composed of predominately six carbon (greater than 95%) and shorter perfluoro chains with no known pathway of decomposing to PFOS or PFOA.

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

SELLER MAKES NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No statements herein are to be construed as inducements to infringe upon a relevant patent. Under no circumstances shall the Seller be liable for incidental, consequential or indirect damages for negligence, breach of warranty, strict liability, tort or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results are based on controlled or lab work and must be confirmed by Buyer by testing for its intended conditions of use.