



# CHEMGuard S-222N

## High Performance Nonionic Fluorosurfactant

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### **Product Description**

CHEMGuard S-222N is a nonionic fluorosurfactant of the polyalkyl ether type. It provides surface tensions as low as 21 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-222N imparts excellent wetting; spreading, leveling and flow control properties to various types of water-based as well as solvent based coating formulations. It's low foaming characteristics in conjunction with it's low surface tension makes it ideal for water-based coating formulations designed for difficult to coat, low surface tension substrates. In addition, Chemguard S-222N is 100% actives, and contains no solvents or water making it ideal for water sensitive formulations.

### **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 Properties<sup>1</sup>**

Appearance	Clear to slightly hazy liquid
Ionic Character	Nonionic
Composition	Approx. 85% actives, 15% polyoxyethylene-Polyoxypropylene copolymer
Density	1.10 g/ml at 25°C
Flash Point	>95°C, Pensky-Martens, closed cup
Viscosity	450 cP @ 25°C
pH	5.0
Refractive index	1.445 @ 25°C

<sup>1</sup> Not for specification purposes.

### **Solubility**

Chemguard S-222N is soluble in water and most organic solvents. The chart below is an example of the solubility of S-222N in many solvent systems. Chemguard can assist in determining solubility in any system.

<b>Solvent</b>	<b>Grams of Chemguard S-222N/ 100 grams of solvent</b>
<b>Distilled Water</b>	<b>&gt;20</b>
<b>Isopropanol</b>	<b>&gt;30</b>
<b>1:1 Water/Isopropanol</b>	<b>&gt;30</b>
<b>Methyl Alcohol</b>	<b>&gt;30</b>
<b>Methyl propyl ketone</b>	<b>&gt;30</b>
<b>Butyl carbitol<sup>1</sup></b>	<b>&gt;30</b>

All values measured at 25°C

### **Dynamic<sup>2</sup> / Equilibrium<sup>3</sup> Surface Tension in dynes/cm**

Percent Active in Distilled Water	at one second	at five seconds	at ten seconds	At equilibrium
0.1	34.0	29.0	25.1	21.6
0.01	52.2	46.1	42.3	26.6
0.001	-	-	-	35.4

<sup>1</sup> Trademark of Union Carbide Corporation

<sup>2</sup> Dynamic surface tension measured by the drop weight technique: Jho, C., and Burke, R., *Journal of Colloid and Interface Science*, 95, 61 (1983).

<sup>3</sup> Equilibrium surface tension measured by Wilhelmy plate.

### **Storage and Shelf Life**

Chemguard S-222N should be stored between 10°C and 50°C. Some solids begin to separate at temperatures below 18°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 one year if stored tightly sealed in the original container at temperatures below 50°C (151°F).

### **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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