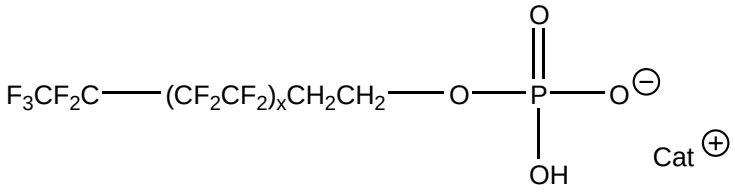
Masurf® FS-115/FS-130



FDA Approved Fluoroaliphatic Oil Resistant Agent & Surfactant

Overview

MASURF FS-115 and FS-130 are characterized as 14% and 28% active aqueous fluoroaliphatic phosphate ester fluorosurfactant solutions. MASURF FS-115/FS130 is an FDA approved for Food Contact applications. FS-115/FS-130 is a water dispersible fluoroaliphatic agent that imparts a high degree of oil and grease resistance to a wide range of surfaces and substrates.

Masurf FS-115/FS-130 is a versatile Surfactant and Soil Resistant agent for use in a wide range of applications. As a **Surfactant**, Masurf FS-115/FS-130 exhibits unique foaming, solubilizing and dispersant properties in non-aqueous, polar organic solvent and non-aqueous mixed systems. In **Personal Care** products, MASURF FS-115/FS-130 adds unique conditioning, wetting, lubricity and oil/sebum resistance properties. When incorporated into **Make-Up and Mascara**, FS-115/130 contributes to a “water-and sweat-proof top coat keeps the finish smudge-free and color vibrant all day long.” In **Make-Up Foundation**, FS-115/FS-130 treated pigments provide a “barrier between sebum and pigments to insure that color stays fresh and true, with no darkening of pigments.” In **Shampoos and Conditioners**, as little as 0.5-1.0% FS-115 can significantly retard or delay the recurrence of oily appearance of hair.

INCI Name: DEA-C8-18 Perfluoroalkylethyl Phosphate

Typical Properties

	FS-115	FS-130
Actives content %	14.5 wt% minimum	28 wt% minimum
Physical form	Light tan dispersion, with mild odor	
Aqueous surface tension @25°C dynes/cm	50.5@0.001%, 37.4@0.01%, 37.4 lowest	
Specific gravity @25°C	1.05±0.04	
pH	9.0±1.5	
Viscosity @25°C	<100 cps	
Flash point	None	
VOC content (volatile-water)	0	
Storage	Store above 32°F and below 100°F	

Handling Information

Refer to the Material Safety Data Sheet (MSDS) available from Mason Chemical Company for information on the safe use, handling and disposal of this product.

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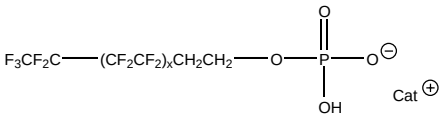

FDA CLEARANCE

MASURF FS-115FS/130 is identified as a substance Generally Recognized As Safe (GRAS) in 21 CFR §176.170 (Components of paper and paperboard in contact with aqueous and fatty foods), and may be safely used as a component of the uncoated or coated food-contact surface of paper and paperboard intended for use in producing, manufacturing, packaging, processing, preparing, treating, packing, transporting, or holding aqueous and fatty foods, subject to the provisions of the section.

MASURF FS-115/FS-130 is certified to comply with the following guidelines as listed in 21 CFR §176.170, where this product is represented as: Diethanolamine salts of mono- and bis (1H, 1H, 2H, 2H-fluoroaliphatic) phosphates where the alkyl group is even numbered in the range of C8-C18 and the salts have a fluorine content of 52.4% to 54.4% as determined on a solids basis.

For use only as an oil and water repellent at a level not to exceed 0.17 pound (0.09 pound of fluorine) per 1,000 square feet of treated paper or paperboard, as determined by analysis for total fluorine in the treated paper or paperboard without correction for any fluorine which might be present in the untreated paper or paperboard, when such paper or paperboard is used in contact with nonalcoholic foods under the conditions of use described in paragraph (c) of this section, table 2, conditions of use (B) through (H).

ECOLOGICAL INFORMATION

Based on data reported for similar products, this product has low toxicity - 96 hour TL_{50} (Rainbow Trout): >1,000 mg/L; 48 hour EC_{50} (Daphnia Magna): >1,000 mg/L (not toxic).

MASURF FS-115/FS-130 is Non-Flammable, and does not contain or release ozone depleting chlorofluorocarbons (CFC’s) or alkylphenol ethoxylates (APE’s).

MANUFACTURING METHOD

The fluoroaliphatic component of MASURF FS-115/130 is manufactured by the “telomerization” process, which differs significantly from the Simon Cell electrochemical fluorination (ECF) manufacturing process utilized by the 3M Company. MASURF fluoroaliphatic products are chemically different from 3M's and do not contain, do not release, and have not been shown to degrade to the products found and cited by 3M in their press release and reports to the EPA, namely perfluorooctane sulfonate (PFOS). Additionally, the manufacturing facility for MASURF FS-115/FS-130 does not utilize the EFC process in any of the products manufactured, and there is no product or component contact with any EFC derived materials in any step of the manufacture and/or distribution that may result in PFOS contamination.