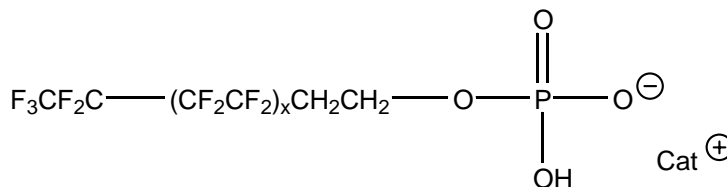


Masurf[®] FS-120A



Fluoroaliphatic Phosphate Ester Fluorosurfactant

Overview

MASURF FS-120A is characterized as a 18% active fluoroaliphatic phosphate ester fluorosurfactant in an aqueous solution. FS-120A contributes exceptional oil resistance, rheology and surface modification, spreading and leveling properties to a wide range of systems. MASURF FS-120A is an ammonium salt, which is preferred to DEA salts when formulated into aqueous **Floor Finishes and Sealers**, where the simple addition of 25-50ppm active FS-120A imparts wetting and leveling with demonstrable Oil and Grease resistance. **Imparts protective Oil and Grease resistance to Concrete, Stone and Tile surfaces used as building materials, including kitchens, flooring and bathrooms.**

In **Specialty Cleaners**, FS-120A imparts a surface barrier to re-soiling, making the next cleaning easier. In **Paints&Coatings**, FS-120A is a leveling agent, defoamer, flow and rheology modifier, and adds soil resistance, and is an effective anti-block in aqueous coatings such as gloss and semi-gloss paints. Useful in **Water-Based Latex Paints** to extend open-time (wet-edge time). Available as MASURF FS-100A, 100% active for use in **Solvent-Based Coatings, Alkyds and Stains** to impart oil and water repellency, stain resistance and antiblock performance. **Compare to Zonyl* FSE, FSP, 8857A.**

In **Personal Care** applications, MASURF FS-120A adds unique surfactant, conditioning, wetting, lubricity and oil/sebum resistance properties.

INCI Name: Ammonium C6-16 Perfluoroalkylethyl Phosphate

Typical Properties

Physical form	Tan dispersion, with mild ammonia odor
Actives content %	18 wt% minimum
Aqueous surface tension @25°C dynes/cm.....	50.5@0.001%, 37.4@0.01%, 37.4 lowest
Specific gravity @25°C.....	1.08±0.04
pH	10.0±1.5
Viscosity @25°C.....	<1000 cps
Flash point	None
VOC content (volatile-water)	0
Storage	Store above 32°F and below 100°F

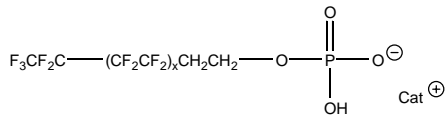
Handling Information

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.

Masurf is a Registered Trademark of Mason Chemical Company.

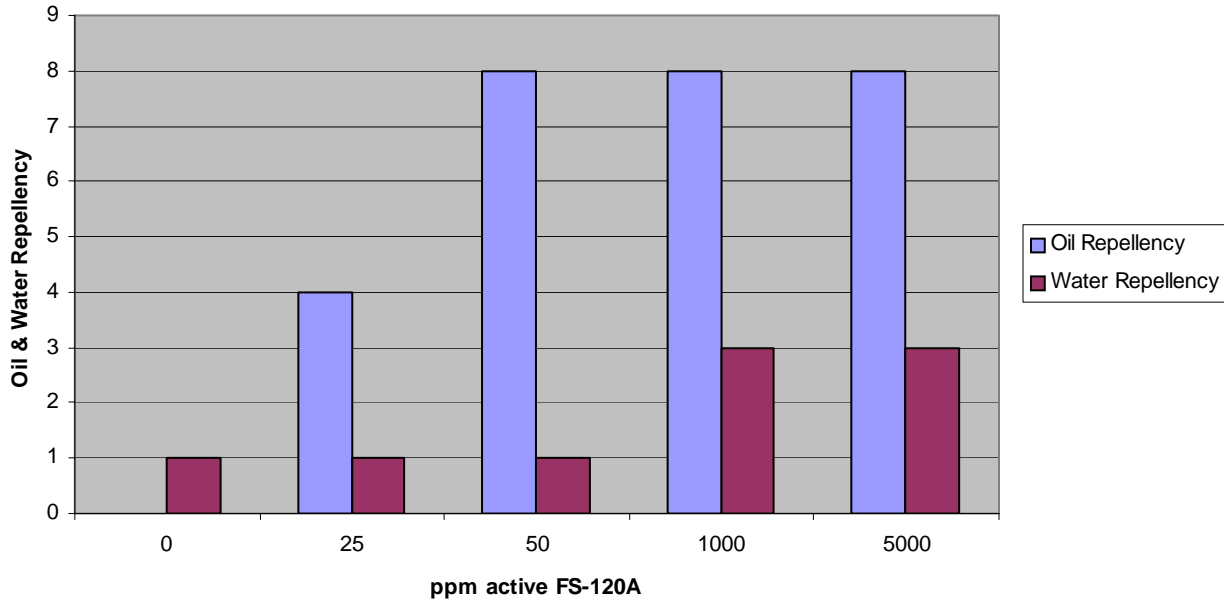
** Zonyl is a Registered Trademark of DuPont*

Masurf[®] FS-120A



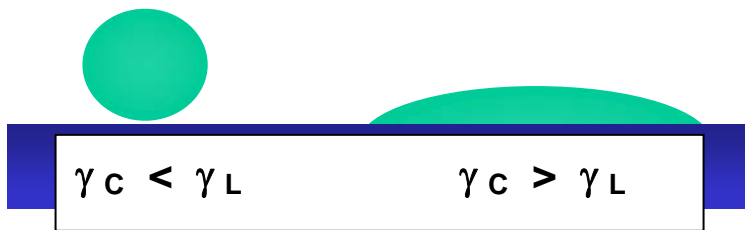
MASURF FS-120A is a 18% active ammonium fluoroaliphatic phosphate ester fluorosurfactant in an aqueous solution. When formulated into aqueous **Floor Finishes and Sealers**, in addition to leveling, as little as 25-50ppm active FS-120A imparts demonstrable oil and grease resistance:

Masurf FS-120A Fluid Resistance



The addition of 0.008-0.016% (25-50ppm active) MASURF FS-120A imparted demonstrable Oil Resistance to this otherwise undifferentiated 20%NV Floor Finish formulation. Hydrocarbons of increasing solvent strength, from Paraffin liquid "Kaydol" to n-Heptane beaded and rolled-off the FS-120A containing Finish treated vinyl composition tile. The Finish formulation without FS-120A allowed the lowest solvent strength to wet the tile.

Masurf FS-120A was added to a 20%NV Floor Finish. Oil & Water Repellency was evaluated after application of 3 coats of approximately 1g/sq.ft. Floor Finish solids to pre-cleaned vinyl composition tiles. Oil Repellency: Modified AATCC Method 118-1997; 1=Paraffin liquid (Surface Tension 31.5mN/m), 8=n-Heptane (19.8mN/m), Water Repellency: Modified 3M Test Method; 1=Water (Surface Tension 72.3mN/m), 2=90/10 Water/IPA (41mN/m), 3=80/20 Water/IPA (32.3mN/m), 11=IPA (22.6mN/m).



Where γ_L = Surface Tension of Liquid,

γ_S = Surface Tension of Solid

γ_C = Critical Surface Tension ($\gamma_S = \gamma_L$)

By lowering the Critical Surface Tension of a surface or film, MASURF FS-120A can contribute Oil & Grease Resistance to a range of products. As an additional example, FS-120A is substantive to metal surfaces, imparting re-soil resistance. Incorporation of MASURF FS-120A into **Vehicle Cleaner/Aluminum Brightener** formulations forms a protective barrier to re-soiling, improving the effectiveness of subsequent cleaning operations.

Masurf FS-120A Fluorosurfactant dilution and mixing guidelines-

To facilitate addition and ensure adequate mixing, it is normal practice with fluoroaliphatic surfactants to add them to the system as a dilute stock solution.

For clear, stable 3% active solutions: combine with gentle agitation 18% Masurf FS-120A with 3% Isopropanol and 3% Ethylene glycol monobutyl ether, warm to 45°C, then q.s. to 100% with water.