TECHNICAL DATA SHEET

Thetawet™ FS-8235

Overview

- Short-Chain Fluorochemical Technology (meets the goal of the US EPA 2010/2015 PFOA Stewardship Program)
- Water-dispersible, anionic fluorosurfactant which is effective at low end-use concentrations
- Does not impart color, or change the optical properties of a coating (beyond potential gloss or DOI - distinctness of image - improvement from higher reflectance)
- Orients and concentrates at all liquid interfaces, imparting block resistance, release properties, improved weatherability and soil resistance, and improved open time
- Readily dilutes in water/alcohol/glycol mixtures with excellent shelf stability
- Ross-Miles Foam test:
  Initial Foam Height: 13 mm
  Foam Height after 10 min: 11 mm

Applications

- High solids coatings
- Automotive finishes and top coats
- Lacquers and polishes
- Floor finishes and sealers
- Industrial and architectural paints & coatings
- Release additive, anti-block
- Adhesives

Technical Information

Thetawet FS-8235 is an anionic fluorosurfactant with 34-36% solids. It is an aqueous emulsion, water dispersible, and low foaming product.

Thetawet FS-8235 is an excellent choice for wetting difficult to wet surfaces such as plastics, oily substrates, waxy surfaces, and for reduction in coating surface defects, enhanced gloss development and improved weatherability and soil resistance. Surface diffusion properties impart block resistance, improved soil resistance, and increased open-time for coatings.

Formulary

Thetawet FS-8235 is dispersible in water, and readily soluble in a range of polar organic solvents such as glycol ethers, alcohols, ketones, acetone and ethyl acetate. The product is sensitive to hard water, so dilution with deionized or softened water is recommended.

Recommended use concentrations vary for Thetawet FS-8235 with application, but in general, 0.04-0.20% is recommended for leveling, gloss development and foam control in water based systems, and 0.20-0.60% in neat or solvent based systems.

Typical Properties

PROPERTY	VALUE
Appearance	Clear liquid, colorless to light yellow
% Solids	34 to 36
Ionic character	Anionic
Water solubility	Dispersible
pH (as is)	7 to 9
Density@25°C	1.12±0.02 g/ml
Boiling Point	100°C
Flash point	13°C (55 °F)
Storage	Protect from freezing.
Shelf life	12 months

Packaging and Handling

Thetawet FS-8235 is available in:
55 gallon plastic drums (Net Wt. 440 lbs)
5 gallon pails (Net Wt. 40 lbs)

In spray applications, use a coarse spray device, such as a trigger sprayer or pressurized dispenser, that does not produce respirable fine particles. DO NOT AEROSOLIZE OR ATOMIZE. This product can only be used in consumer spray applications in concentrations at or below 0.1 weight percent of active ingredient (0.28% as sold). For further Safety Information, please refer to the Safety Data Sheet (SDS) for information on the safe use, handling, and disposal of this product.

DOT Classification: Flammable Liquid, Group II, Hazard class 3, UN 1219

Whether you're looking for a replacement product or an ingredient for a specific attribute, give us a call. We can provide assistance based upon your particular formulation requirements and composition; please feel free to contact us.

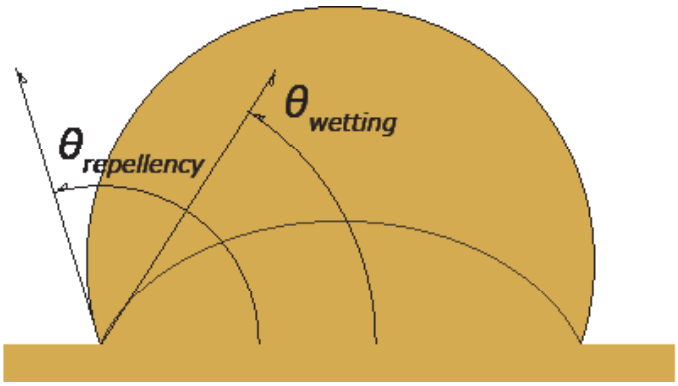
Please refer to back page for important information

Thetawet™ FS-8235

Short-Chain fluorosurfactant

Through extensive product development, applications research and manufacturing optimization, Thetawet FS-series short-chain fluorosurfactants deliver performance on-par with long-chain alternatives, meeting the goal of the US EPA 2010/2015 PFOA Stewardship Program.

Often used along with traditional and specialty surfactants, Thetawet FS-series short-chain fluorosurfactants deliver maximum performance not achievable with traditional and specialty alkyl, acetylenic diol and silicone surfactants alone. Thetawet FS-series short-chain fluorosurfactants are exceptional wetting agents efficient at low end-use concentrations, typically in the 10-100 ppm range. Very low end-use concentrations allow for economical use and often eliminate re-wet properties characteristic of the higher end-use concentrations required with traditional and specialty surfactants.



Physical Scientists assigned the Greek Letter Theta θ to represent the angle formed by a liquid at the three phase boundary where a solid, liquid, and gas intersect. It is also known as the contact angle. The measurement of Theta is the means by which we can quantify both how well a liquid can wet out a surface, or by contrast, how well a surface can resist being wetted. The manipulation and control of Theta is critical in the design of effective oil, water, and stain repellents, and the reduction of surface tension necessary to make improved coatings and cleaning products. As illustrated below, a decreasing θ represents increasing wetting and adhesiveness, and an increasing θ represents increasing repellency.

It is only fitting that ICT chose Theta θ to represent these new and exciting products.

Thetawet FS-8235 is an excellent choice for wetting difficult to wet low energy surfaces such as plastics, oily substrates, waxy surfaces, and silicone and fluoropolymer treated fabrics. The ability of FS-8235 to lower the aqueous surface tension of liquids, allows those liquids to wet low energy surfaces. By contrast, typical alkyl surfactants, at any concentration, will only lower aqueous surface tension to about 30 dynes/cm, meaning that a typical alkyl surfactant solution will not wet a 25 dynes/cm surface, resulting in lack of coverage, incomplete leveling or inadequate cleaning performance.

Aqueous Surface Tension, duNoüy ring,
Wt.% actives, dynes/cm @25°C

Low surface tension results in better wetting, spreading, and penetration which translates into improved film uniformity, enhanced adhesion, reduced pinholes and craters for coatings, improved spreading for reduced water spotting, and smoother and more even films for finishes and polishes. It also translates into better wetting and penetration of cleaning solutions which makes them more effective.

A unique property of fluorinated surfactants, and FS-8235 in particular, is the ability to migrate and diffuse to the surface-air interface. In high solids coatings that rely on low Tg resins, Thetawet FS-8235 contributes not only to wetting, spreading and leveling, but reduces the tendency of glossy paint films to block, or stick to themselves. Improved block resistance properties contributed by FS-8235, along with reduction in film tackiness, and properties that allow the formulator to reduce hydrophobic additives, leveling aids, open-time extenders and so on, resulting in painted surfaces that are more efficient to produce and bring additional value through improved soil resistance and weatherability.