



# Thetawet™ FS-8200

Short-Chain telomer-based fluorosurfactant

## Overview

- Short-Chain Fluorochemical Technology (meets the goal of the US EPA 2010/2015 PFOA Stewardship Program)
- Solvent-free, 100% active water-insoluble anionic fluorosurfactant effective at low end-use concentrations
- Powerful leveling performance for smoother, defect-free coatings
- Optimized for surfactant performance, Thetawet short-chain technology meets or exceeds performance of long-chain products
- 100% active material ideally suited for non-aqueous and many solvent reducible applications
- Unique diffusibility to surface-air interface contributes to improved weatherability and soil resistance
- Reduces foaming tendency in paints and coatings, waxes and adhesives
- Resistant to UV degradation for interior or exterior applications

## Applications

- High solids coatings
- Floor finishes and sealers
- Automotive Finishes and Top Coats
- Lacquers and Polishes
- Adhesives
- Industrial and Architectural Paints & Coatings
- Release additive, anti-block
- Caulks and sealants
- Mold release

## Technical Information

Thetawet FS-8200 is a 100% active water insoluble anionic fluorosurfactant. A low-melting wax, **Thetawet FS-8200 should be melted and mixed well immediately prior to use to ensure consistent performance.** The absence of any solvent or water makes Thetawet FS-8200 ideal in water sensitive systems, 100% solids and/or high solids applications, and as a solvent soluble additive to existing systems wherein minimal modification to the overall formulation is desirable. For ease of handling, a water dispersible version (Thetawet FS-8250) is also available.

Thetawet FS-8200 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, mold release and improved open-time for coatings.

## Formulary

Thetawet FS-8200 is virtually insoluble in water, but sparingly soluble in a range of polar organic solvents such as glycol ethers, alcohols, ketones, acetone and ethyl acetate. Gently warming the solution will increase solubility, as will increasing the pH to  $\geq 9$  with base.

Recommended use concentrations vary with application, but in general, 100-200 ppm active is recommended for leveling, gloss development and foam control in coatings, and up to 2000 ppm for release, anti-block and anti-soiling surface modification in solvent-based coating applications.

## Typical Properties

PROPERTY	VALUE
Appearance	Colorless to pale amber, viscous liquid that solidifies to a colorless to pale yellow solid over time
Odor	Mild
Ionic character	Anionic
Water solubility	Insoluble
pH (as water)	2.5-4.0
Density@25°C	1.80±0.05 g/ml
Melting Point	55-65°C
Flash point	None
Storage	Freeze/thaw stable
Shelf Life	3 years

## Packaging and Handling

Thetawet FS-8200 is available in: 5 gallon pails (Net Wt. 60 lbs).

Refer to the Safety Data Sheet (SDS) for information on the safe use, handling, and disposal of this product.

DOT Classification: Non-Regulated

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.

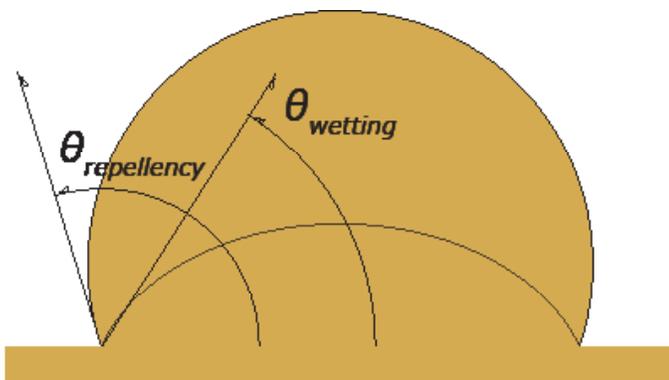
## Thetawet™ FS-8200

### Short-Chain fluorosurfactant

Through extensive product development, application 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  $\theta$  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  $\theta$  represents increasing wetting and adhesiveness, and an increasing  $\theta$  represents increasing repellency and soil resistance.



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

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As a solvent soluble additive, Thetawet FS-8200 is a 100% active fluorinated surfactant that can be used in a tremendous variety of coatings, films, adhesives and surface treatments. Low in color, FS-8200 will not impart color or change the color or inherent optical properties of the resultant film or coating.

Thetawet FS-8200 is effective at reducing surface tension not possible with simple hydrocarbon or silicone-based surfactants, for improved leveling, reduction of surface defects such as craters, fish eyes, pin holes, orange peel and poor thin film control. Use of FS-8200 in coatings improves intercoat adhesion and extends open-time. Powerful leveling properties enhance gloss development and improved film quality.

A unique property of fluorinated surfactants, and FS-8200 in particular, is the ability to migrate and diffuse to the surface-air interface. In high solids, low VOC coatings that rely on low Tg resins, Thetawet FS-8200 contributes not only to spreading and leveling, but reduces the tendency of glossy paint films to block, or stick to themselves. Improved block resistance properties contributed by FS-8200, 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.