



Thetawet™ FS-8020DB

Short-Chain telomer-based fluorosurfactant

Overview

- Short-Chain Fluorochemical Technology (meets the goal of the US EPA 2010/2015 PFOA Stewardship Program)
- 30% active water-soluble anionic fluorosurfactant effective at low end-use concentrations
- Powerful wetting and leveling performance for smoother, defect-free coatings
- Does not impart color, or change the optical properties of a coating, beyond potential gloss or DOI (distinctness of image) improvement from better reflectance
- Containing a Low Vapor Pressure solvent, partially replaces coalescent solvents for VOC formulation reductions
- Readily dilutes in water, or water/alcohol/glycol mixtures with excellent shelf stability
- Stable in highly acidic or basic environments, and in hard water without chelation
- Exceptional stability and functionality in severe thermal and chemical environments

Applications

- Wetting agent
- Floor finishes and sealers
- Automotive Finishes and Top Coats
- Lacquers and Polishes
- Adhesives
- Industrial and Architectural Paints & Coatings
- Additive for fiber finishes for improved finish uniformity

Technical Information

Thetawet FS-8020DB is a 30% active water soluble, moderate foaming anionic fluorosurfactant. Containing a low vapor pressure solvent, Thetawet FS-8020DB ideal for use in low VOC applications.

Thetawet FS-8020DB is an excellent choice for wetting difficult to wet surfaces such as plastics, oily substrates, waxy surfaces, and for reduction in coating surface defects, and enhanced gloss development for smoother, more even films in finishes and polishes.

Thetawet FS-8020DB provides far greater surface tension reduction than can be achieved with either hydrocarbon or silicone-based surfactants, and is stable even in highly acidic or basic environments. When used in conjunction with “conventional” hydrocarbon wetting agents, it is possible to achieve a system that not only dramatically reduces surface tension, but also lowers interfacial tension resulting in a liquid that easily wets and spreads on otherwise hard to wet surfaces.

Formulary

Mix before use. Thetawet FS-8020DB is soluble in water, and in a range of polar organic solvents such as glycol ethers, alcohols, ketones, acetone and ethyl acetate.

Recommended use concentrations vary for Thetawet FS-8020DB with application, but in general, the surface tension of aqueous solutions and emulsions can be reduced to 19-20 dynes/cm with the addition of as little as 0.01 to 0.05% as supplied.

Typical Properties

PROPERTY	VALUE
Appearance	Clear to slightly hazy, colorless to pale yellow liquid
Odor	Mild
Ionic character	Anionic
Water solubility	Soluble
pH (5% aq.)	5.5±0.5
Density@25°C	1.15±0.03 g/ml
Flash point	>200°F (Tag CC)
Storage	Freeze/thaw stable
Shelf life	12 months

Packaging and Handling

Thetawet FS-8020DB is available in:
275 gallon totes (Net Wt. 2200 lbs)
55 gallon plastic drums (Net Wt. 440 lbs)
5 gallon pails (Net Wt. 40 lbs).

Please 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.

Please refer to back page for important information

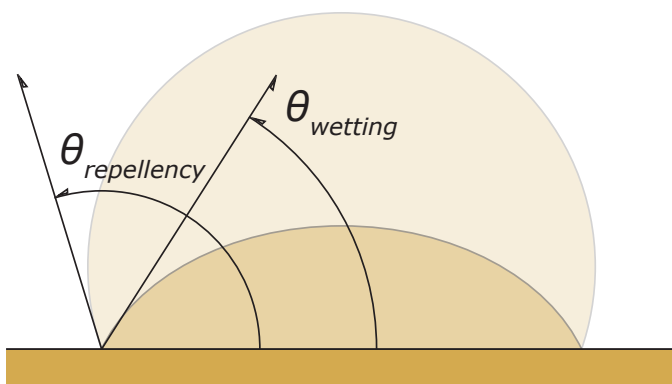
Thetawet™ FS-8020DB

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.

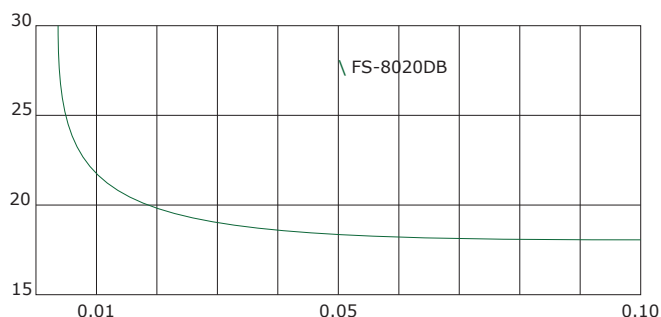
Often used along with traditional and specialty surfactants, Thetawet FS-series short-chain fluorosurfactants deliver maximum performance not achievable with traditional and specialty alkyl, acetylenic diol and silicone surfactants alone. Thetawet FS-series short-chain fluorosurfactants are exceptional 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 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-8020DB 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-8020DB 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

Demonstrated above, the surface tension of aqueous solutions and emulsions can be reduced to 19-20 dynes/cm with as little as 0.01-0.05% Thetawet FS-8020DB. This 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.

This information relates only to the specific material referred to herein and not to its use in combination with any other material or in any process, unless explicitly stated herein. Such information is, to the best of our knowledge and belief, accurate and reliable as of the date compiled; however, no warranty, guarantee or other representation is made as to its accuracy, reliability, or completeness, or regarding any liabilities arising from others' intellectual property rights. ID# 20230519. revision 1.