



Flexiwet™ NF

Non-foaming anionic fluorosurfactant

Overview

- Low/No-foaming anionic fluorosurfactant
- Outstanding wetting properties for wetting difficult to wet surfaces
- Functions as a defoamer in many systems, especially in anionic systems
- Eliminates the need for defoamers in applications such as floor polishes and carpet extraction cleaners
- Provides anti-soiling properties
- Stable in concentrated acids, bases and oxidizing solutions
- Low effective use levels of 0.01-1.0%
- Retards resoiling of surfaces for added performance benefit in carpet and hard surface (tile, tub and bowl) cleaners
- Flexiwet NF is somewhat sensitive to hard water, and some turbidity results when diluted if deionized or softened water is not used.
- WERCS ID number: WPS1209281
- WERCS Validation number: 1209281

Applications

- Floor polishes and strippers
- Carpet extraction and spot cleaners
- Paints and coatings
- Caustic bottle washing
- Acid based cleaners
- Bleach based cleaners
- Plating bath anti-mist
- Recirculating and pressure washing systems
- Agricultural products

Also available as an 80% active Flexiwet NF-80

Technical Information

Flexiwet NF is a 7% active low/no-foam anionic fluorosurfactant in an aqueous solution. Flexiwet NF exhibits exceptional surface activity in basic, acidic and oxidizing systems, with exceptional stability and functionality in severe thermal and chemical environments

Flexiwet NF is an excellent choice for wetting difficult to wet surfaces such as plastics, oily substrates, waxy surfaces, and silicone and fluoropolymer treated fabrics. The ability of Flexiwet NF to efficiently reduce the surface tension of aqueous solutions and emulsions to 19 to 20 dynes/cm results in better wetting, spreading, and penetration. Efficient surface tension reduction translates into improved film uniformity, enhanced adhesion, reduced pinholes and craters for coatings, reduced droplet size and therefore less water spotting, and smoother and more even films for finishes and polishes. It also translates into better wetting and penetration of cleaning solutions for more effective cleaning performance.

Formulary

Dramatic surface tension reduction of all types of aqueous systems can be achieved with the addition of 0.02 to 1.0% of Flexiwet NF, including strong acid, base, and oxidizing solutions. The surface tension of 10% sodium hydroxide can be lowered to 30 dynes/cm with as little as 0.05% Flexiwet NF and to 20 dynes/cm with as little as 0.5% Flexiwet NF. Similarly, the surface tension of 25% sulfuric, 25% nitric, and 10% hydrochloric acid can be lowered to the mid 30s dynes/cm with 0.05% Flexiwet NF and to 19 dynes/cm with 0.5% Flexiwet NF.

Typical Properties

PROPERTY	VALUE
Appearance	Clear to slightly hazy, colorless to pale amber liquid
Odor	Mild
Ionic character	Anionic
Water solubility	Soluble
pH (as is)	2.5±0.5
Density@25°C	1.02±0.1 g/ml
Boiling Point	100°C
Flash point	None (aqueous)
Storage	Stable to freezing*
Shelf life	3 years

* Product may separate when thawed after freezing; thaw/mix thoroughly before use.

Packaging and Handling

Flexiwet NF is available in:
275 gallon totes (Net Wt. 2200 lbs)
55 gallon plastic drums (Net Wt. 440 lbs)
5 gallon plastic pails (Net Wt. 40 lbs)

Product settling is common in this category of materials. Mix product completely to assure it is homogenous prior to sampling and use.

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

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Flexiwet NF provides far greater surface tension reduction than can be achieved with either hydrocarbon or silicone based surfactants. When used in conjunction with “conventional” hydrocarbon surfactants, 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.

Flexiwet NF also retards resoiling of surfaces cleaned with solutions containing it. This can be a major value and benefit in many cleaning formulations, especially carpet and hard surface (tile, tub, and bowl) cleaners.

Flexiwet NF’s unique properties make it an ideal choice in a wide range of applications. A few applications include:

Floor polishes & strippers:

The low/no foam properties and superior wetting properties of Flexiwet NF make it an ideal choice in floor polish applications. Flexiwet NF has the potential to replace both traditional fluorinated surfactants as well as the silicone defoamer used in many systems to control foaming. Silicone defoamers can create problems if used improperly or if the right defoamer is not utilized.

Flexiwet NF can be used in floor strippers to improve wetting on difficult to strip surfaces and to reduce or eliminate concerns with foaming. The significant reduction in surface tension and foam allows the stripper to work more effectively thereby reducing labor time and costs.

Carpet & upholstery extraction and spot cleaners:

When formulated properly, Flexiwet NF eliminates the need for a separate defoamer in carpet and upholstery extraction applications and provides valuable benefits in both spot cleaners and extraction formulations. These benefits include enhanced anti-soiling properties, increased wetting and penetration and improved cleaning and soil/stain removal. Review the Flexiclean CC-307 data sheet for formulations containing Flexiwet NF. Flexiclean CC-307 is a unique polymer/surfactant system developed specifically for carpet cleaning applications.

Paints & coatings:

Flexiwet NF is a perfect choice in aqueous paints and coatings and will provide enhanced wetting, spreading, improved adhesion and reduction in cratering, retraction, and pinholing. Suggested use levels range from 0.01-0.3% based on the weight of the coating.

Mist suppression:

What is a mist suppressant, and why is it necessary?

In 1990, the Clean Air Act was modified in such a way as to direct the Environmental Protection Agency (EPA) to regulate emissions of nearly 200 toxic chemicals, including chromium compounds. The hexavalent form of chromium is highly toxic and strongly suspected of causing lung cancer.

Chromium electroplating and anodizing tanks are a sizeable contributor to chromium emissions, and EPA estimates that full compliance with emissions regulations throughout the over 5,000 electroplating/anodizing tanks located in the United States should reduce emissions by 173 tons of chromium (99 percent) from pre-compliance levels.

The emission reduction regulation requires, among other things, that ongoing monitoring is demonstrated through continuous review monitoring of the operating parameters of the tank. If a wetting agent is used for compliance purposes, the surface tension of the bath must be monitored every four hours. If a foam blanket is used, the foam thickness must be monitored every hour.

How do mist suppressants work?

As mentioned above, two different approaches to mist suppression exist: foam blankets and wetting agents. Either can function effectively.

Foam blankets are easier to monitor, as measuring foam height is easier, and provide a visual demonstration that they are working; they also require more frequent monitoring, and can entrap hydrogen gas within them (which can then pose an explosion risk).

Wetting agents need less frequent monitoring and offer the added benefits of enhancing the wetting of the plating solutions on the substrate and reducing dragout from the bath, but require a more sophisticated measurement and offer no obvious visual indication of performance.

How is Flexiwet NF used as a mist suppressant?

Flexiwet NF is a wetting agent mist suppressant. It performs by reducing the surface tension of the plating solution, which reduces the initial bubble size, making them collapse faster and with less impact on the surface, thereby minimizing emissions.

Evaluate Flexiwet NF in chromium plating baths at levels between 0.5% and 1.5%, depending upon the specific bath composition. As an example, a standard chrome plating solution measured 91 dynes/cm before addition of Flexiwet NF; after addition of 0.75% (as delivered) Flexiwet NF on total weight of solution, the surface tension dropped to 33-34 dynes/cm. Plating baths should be monitored and additional wetting agent added as needed to maintain required performance levels per regulatory requirements.

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