

# 3M™ Novec™ Fluorosurfactant FC-4434

**Note:** Not for specification purposes  
All values determined at 77°F (25°C) unless otherwise specified

## Introduction

3M™ Novec™ Fluorosurfactant FC-4434 is a water-soluble, general purpose nonionic fluorinated surfactant which contributes excellent wetting, spreading and leveling properties to a variety of coating systems. Some typical application areas include architectural coatings, inks, floor polishes, high solids coatings, water reducible coatings and radiation curable coatings.

## Suggested Applications

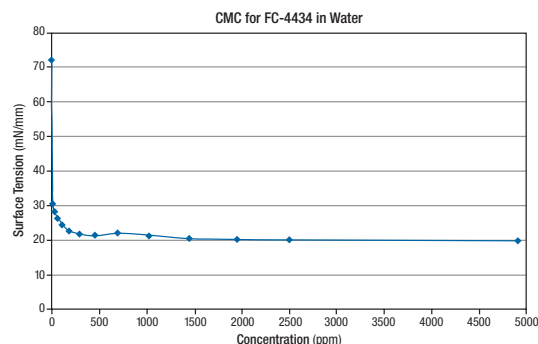
Novec fluorosurfactant FC-4434 is a dilute solution of 25% active fluorochemical surfactant in a water miscible diluent. It may be used as a flow and leveling agent in various applications including, inks, paints and coatings, polymers, adhesives, waxes, polishes and caulks.

Recommended use level is between 0.05% and 0.3% active surfactant. However, use level can vary depending on the application and concentration of other additives and solvents in the formulation.

## Typical Physical Properties

Properties	Typical Values
Appearance	Clear yellow liquid
Gardner Color	2.2 – 2.7
Refractive Index	1.43
Specific gravity	1.006 g/cc
Density (lbs./gal)	8.4
Flash point (Setaflash closed cup)	78°F (173°C)
pH (of 1% aqueous solution)	4.5
Vapor pressure (@ 55°C / 131°F)	1.993 mmHg / 0.039 psia
Viscosity	14
Solubility in water	1.0 wt%
Type	Non-ionic, polymeric
Composition	25% fluoroaliphatic polymeric esters in dipropylene glycol monomethyl ether

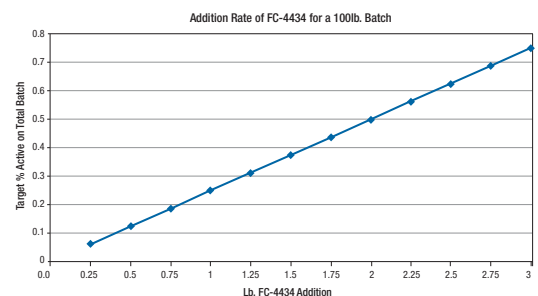
## Surface Tension/CMC (in water)



Novec fluorosurfactant FC-4434 is very efficient at reducing the surface tension in aqueous coating systems.

## Addition Rate

The chart below shows a convenient way to determine how much Novec fluorosurfactant FC-4434 is needed to provide a target % active surfactant level. This combined with the CMC chart above provides target levels of total active surfactant in a coating system.



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## Foaming

The 3M™ Novec™ Fluorosurfactant FC-4434 shows lower propensity to form foam in aqueous systems. This can translate into the ability to use less defoamer and/or a less aggressive defoamer additive in your formulation.

Product	Foam Quality (%)	Foam Stability (minutes) (t 1/2 value)
Novec FC-4434	81.25	0.75
Novec FC-4430	85.58	2
Novec FC-4432	85.85	2
Fluorad™ FC-430 *	80.77	0.5

\* FC-430 is no longer available for sale from 3M. Data related to FC-430 are presented here for historical reference purposes only.

## Solubility

Solvent	Grams of FC-4434/100 grams of solvent
Distilled water	<6
Butyl cellulolve	100
Toluene	100
Methyl ethyl ketone	100
Dimethyl formamide	100
Isopropyl alcohol	100
Methanol	100
Dowanol™ PM	100
Texanol™	100
Proglyde™ DMM	100
N-Methyl Pyrrolidone	100
Mineral spirits	25

## Packaging

Novec fluorosurfactant FC-4430 is currently available in:

- 8 lb. pails
- 40 lb. pails
- 250 lb. drums

## Thermal Stability

The active ingredient in Novec Fluorosurfactant FC-4434 exhibits good thermal stability when used in thermal processing applications.

### TGA data for Novec FC-4434

This data shows the excellent thermal stability of Novec fluorosurfactant FC-4434 if used in a thermal processing application.

Temperature (°C)	FC-4434 Specified % Weight Loss					
	5%	10%	50%	80%	90%	95%
195	255	305	330	355	405	

(10 mg sample heated at 5°C / min. in air). Temperatures (°C) at which specified % wt. loss occur.

## Regulatory Summary

- The PFBS-based surfactant produced by 3M has been reviewed by the U.S. EPA and placed on the TSCA inventory. There is a testing consent order in place which only applies to 3M, not 3M customers. The products are REACH compliant in Europe. The products are available for purchase in all countries without chemical inventories and in China, Korea, New Zealand and on a limited basis in Australia, Canada and Japan. FC-4434 is not on the Philippines chemical inventory. Please see current product Material Safety Data Sheet for most current regulatory listing information.
- PFBS and PFBS-based surfactants are not included in the U.S. EPA's PFAS Final Significant New Use Rule (SNUR) (67 Fed. Reg. 72854).

For additional country specific information, please contact 3M at 1-800-367-8905.

## Product Safety and Handling

3M™ Novec™ Fluorosurfactant FC-4434 is intended for use in non-dispersive applications.

3M does not recommend this product for use in applications involving repeated exposure through skin contact, inhalation, or ingestion. It is not intended for food, cosmetic, medical or pharmaceutical usage. Neither 3M nor the U.S. Food and Drug Administration has evaluated or reviewed this product for food, cosmetic, medical or pharmaceutical applications.

It is the user's responsibility to determine whether a coating containing this product is durable and properly cured for the end use. Any used or unused material for disposal should be incinerated in an industrial or commercial facility in the presence of a combustible material. Combustion products will include HF. Facility must be capable of handling halogenated materials. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste. For additional disposal information, see the product Material Safety Data Sheet.

For additional product safety and handling information, please read the product label and Material Safety Data Sheet before using this product.

## 3M Resources

To request a sample, place an order or request additional information, please contact your local 3M representative, an authorized 3M distributor or call 1 800 367 8905.

**The 3M™ Novec™ Brand Family** The Novec brand is the hallmark for a variety of proprietary 3M products. Although each has its own unique formula and performance properties, all Novec products are designed in common to address the need for safe, effective, sustainable solutions in industry-specific applications. These include precision and electronics cleaning, heat transfer, fire protection, lubricant deposition and several specialty chemical applications.

3M™ Novec™ Surfactants • 3M™ Novec™ Engineered Fluids • 3M™ Novec™ Aerosol Cleaners • 3M™ Novec™ 1230 Fire Protection Fluid • 3M™ Novec™ Electronic Coatings

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