

# TMC-4200 ELECTRONIC SURFACTANT

TMC-4200 Electronic Surfactant is an anionic fluorochemical surfactant.

## PRODUCT INFORMATION

TMC-4200 Electronic Surfactant was designed as an additive to improve wetting in buffered HF (BHF) or buffered oxide etch (BOE) solutions in semiconductor, flat panel display, and solar panel applications.

TMC-4200 Electronic Surfactant is an anionic fluorochemical surfactant having 25% active material in dilute aqueous ammonia. When used in BOE/HF solutions, TMC-4200 Electronic Surfactant significantly lowers the surface tension and improves the wetting of the solution. This improved wetting can improve the etch uniformity of BOE/BHF solutions while having little to no effect on the etch rate.

Aligning with semiconductor clean processing, TMC-4200 Electronic Surfactant has low metals (typically <500 ppb of specified metals) and solutions can be filtered without impacting the surfactant performance. TMC-4200 Electronic Surfactant has low adsorption to wafer surfaces, and complete removal can be achieved by using a bake step following the etch process.

## APPLICATIONS

- Cleaning or etching of silicon, quartz, or glass surfaces in manufacture of semiconductors, flat panel displays, and solar panels

## FEATURES

- Improved wetting of etch solutions
- Little to no effect on the etch rate
- Solubility in wide range of BOE/BHF blend ratios
- Effective at low concentrations
- Low metals
- Filterable
- Limited surface adsorption
- Surfactant is volatile and can be removed by heating
- Low foaming

## PACKAGING

TMC-4200 is available in the following sizes and weights:

- **Jug** — 12 lb / 5.4 kg / 1.3 gal / 5 L
- **Pail** — 44 lb / 20 kg / 4.8 gal / 18.2 L
- **Drum** — 551 lb / 250 kg / 60 gal / 227.3 L
- **Sample** — 2.2 lb / 1 kg / 0.3 gal / 0.9 L
- **Tote** — Available Upon Request



# TMC-4200 Continued

## PHYSICAL PROPERTIES

PROPERTY	UNITS	TMC-4200
Type	—	Replacement
Appearance	—	Colorless Transparent Liquid
Specific Gravity	kg/L	1.14
Surfactant Type	—	Anionic

Not for specification purposes. All values @ 25°C unless otherwise specified.

## COMPOSITION

ITEMS	CAS NO.	SPECIFICATION
Water	7732-18-5	60 ~ 80%
Ammonium Fluoroalkyl Sulfonamide	484024-67-1	24 ~ 28%
Ammonium Hydroxide	1336-21-6	0.1 ~ 4%

## SHELF LIFE & STORAGE

Shelf life is 5 years from the date of manufacture when stored in the original packaging materials and stored under normal conditions. TMC will re-certify material every 5 years up to 20 years.

## DISPOSAL & RECYCLING

This fluid can be recycled and reused. Help protect the environment and don't pay for expensive disposal services.

TMC Industries can reclaim your used fluorinated fluids, restoring them to like-new condition, and save you up to 50% in replacement fluids while protecting the environment.

TMC Reclaimed Fluids are tested to meet new product specifications. It will be clear and odorless, and a Certificate of Analysis is issued with every order.

TMC Industries offers a **100% satisfaction guarantee** on all our reclaimed fluids. We back this up with a no-questions-asked refund policy. To learn more, [click here](#).

## EXTERNAL DOCUMENTS

- [TMC Used Fluid Reclamation Service Brochure](#)

**Safety and Handling:** Before using this product, please thoroughly read the current product SDS and label, following all applicable safety precautions described therein (e.g., recommended storage and safe handling, appropriate exposure controls and personal protective equipment (PPE), addressing accidental spills, disposal considerations, etc.).

**Safety Data Sheet:** Consult Safety Data Sheet before use.

**Regulatory:** For regulatory information about this product, contact your TMC representative.

**Technical Information:** The technical information, recommendations and other statements contained in this document are based upon tests or experience that TMC believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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