

# SAFETY DATA SHEET

Product name: FeF Cetyl Trimethyl Ammonium Bromide (CTAB) USP/NF Page: 1/12  
 Revision Date: 2016-12-16 Print date: 2016-12-16  
 SDS-ID: GB-EN/13.0

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

Product name: FeF Cetyl Trimethyl Ammonium Bromide (CTAB) USP/NF  
Alternative Names: Trimethylhexadecylammonium bromid  
 Cetrimonium bromide  
 N,N,N-trimethylhexadecan-1-aminium bromide  
CAS-No.: 57-09-0  
EC No.: 200-311-3  
REACH Reg. No.: 01-2119989160-35-0000  
Container size: 25 kg

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Application: Preservative and active ingredient in the cosmetic and pharmaceutical industries.  
Identified use(s): Manufacture of substances.  
 Formulation & (re)packing of substances and mixtures  
 Formulation of articles with cosmetics, personal care products, pharmaceuticals.  
 Use as a processing aid.  
 Use in cosmetics and personal care products.  
 Use in laboratories  
 Use of articles with cosmetics, personal care products, pharmaceuticals.  
Uses advised against: None.

### 1.3. Details of the supplier of the safety data sheet

Supplier: Novo Nordisk Pharmatech A/S  
 Københavnsvej 216  
 DK-4600 Køge  
 Tel:+45 56 67 10 00  
 www.novonordiskpharmatech.com  
Responsible for safety data sheet authoring: nnprinfo@novonordiskpharmatech.com

### 1.4. Emergency telephone number

Emergency telephone: + 45 56 67 10 00  
 (Only during office hours)

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## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

GHS/CLP: Acute Tox. 4;H302 - Skin Irrit. 2;H315 - Eye Dam. 1;H318 - STOT SE 3;H335 - STOT RE 2;H373 - Aquatic Acute 1;H400

References: SCL: Skin Irrit. 2;H315: C  $\geq$  2,5 %

### 2.2. Label elements



Danger

Contains: Trimethylhexadecylammonium bromid  
EC No.: 200-311-3

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H373c	May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	Very toxic to aquatic life.
P260a	Do not breathe dust.
P262	Do not get in eyes, on skin, or on clothing.
P280g	Wear eye and face protection.
P305/351/338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P273	Avoid release to the environment.
P501a	Dispose of contents/container in accordance with local regulations.

### 2.3. Other hazards

PBT/vPvB: This substance is not classified as PBT or vPvB.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

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GHS/CLP:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH Reg. No.:</u>	<u>Chemical name:</u>
100	57-09-0	200-311-3	-	Trimethylhexadecylammonium bromid

References: Classification: See section 2.

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

Inhalation: Dust inhalation: In case of problems: Move injured person into fresh air and keep person calm under observation. If uncomfortable: Seek hospital and bring these instructions.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water. If irritation persists: Seek medical attention and bring along these instructions.

Eye contact: Do not rub eye. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Continue flushing during transport to hospital. Bring these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects: See section 11 for more detailed information on health effects and symptoms.

### 4.3. Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

Extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

### 5.2. Special hazards arising from the substance or mixture

Specific hazards: During fire, gases hazardous to health may be formed. (HBr, NOx)

### 5.3. Advice for firefighters

Protective equipment for fire-fighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

### **6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions: Avoid inhalation of dust and contact with skin and eyes. Use work methods which minimise dust production. Follow precautions for safe handling described in this safety data sheet.

### **6.2. Environmental precautions**

Environmental precautions: Do not discharge into drains, water courses or onto the ground.

### **6.3. Methods and material for containment and cleaning up**

Methods for cleaning up: Collect spillage with shovel, broom or the like. Flush contaminated area with plenty of water.

### **6.4. Reference to other sections**

References: For personal protection, see section 8.  
For waste disposal, see section 13.

## SECTION 7: HANDLING AND STORAGE

### **7.1. Precautions for safe handling**

Safe handling advice: Observe good chemical hygiene practices. Avoid inhalation of dust and contact with skin and eyes. Change contaminated clothing. Avoid eating, drinking and smoking when using the product.

Technical measures: Use work methods which minimise dust production. Avoid spreading dust.

Technical precautions: Provide easy access to water supply and eye wash facilities. Mechanical ventilation required.

### **7.2. Conditions for safe storage, including any incompatibilities**

Technical measures for safe storage: No special precautions.

Storage conditions: Store in closed original container. Do not store near heat sources or expose to excessive temperatures.

### **7.3. Specific end use(s)**

Specific use(s): Not relevant.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

Occupational exposure limits:

<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>As:</u>	<u>Exposure limits:</u>	<u>Type:</u>	<u>Notes:</u>	<u>References:</u>
-	Dusts, respirable dust	-	4 mg/m <sup>3</sup>	TWA	-	EH40
-	Dusts, total inhalable dust	-	10 mg/m <sup>3</sup>	TWA	-	EH40

DNEL/PNEC:

DNEL:

Acute Toxicity (Inhalation): - Local Effects: 0,05 mg/m<sup>3</sup>

Acute Toxicity (Dermal): - Local Effects: 50 µg/cm<sup>2</sup>

Long term systemic effect - (Inhalation): 0,05 mg/m<sup>3</sup>

Long term systemic effect - (Dermal): 0,4 mg/kg/day

Long Term - Local Effects - (Dermal): 250 µg/cm<sup>2</sup>

PNEC:

Freshwater: 0.026 µg/l

Marinewater: 0.0026 µg/l

Intermittent release: 0.54 µg/l

STP: 0.19 mg/l

Soil: 0.21 mg/kg

### 8.2. Exposure controls

Engineering measures:

Provide adequate ventilation. Observe occupational exposure limits and minimise the risk of inhalation of dust. An eye wash bottle must be available at the work site.

Personal protection:

Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Respiratory equipment:

During dust-raising work: Use respiratory equipment with particle filter, type P2. The use of filtering respirators should be limited to max. 3 hours per day.

Hand protection:

Wear protective gloves. Nitrile gloves are recommended. Other types of gloves can be recommended by the glove supplier.

Eye protection:

Wear goggles/face shield.

Skin protection:

Wear suitable protective clothing.

Hygiene measures:

Wash hands after contact.

Wash contaminated clothing before reuse.

Environmental Exposure Controls:

Not available.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

Appearance: A white or almost white crystalline powder.  
Manufacture of substances.: Solution.

Odour: Not available.

Odour threshold: Not available.

pH: 4-6 (100 g/l)

Melting point / freezing point: 237°C (101,3 kPa)

Boiling point: Not relevant. Decomposes prior to boiling

Flash point: Not relevant. Solid.

Evaporation rate: Negligible.

Flammability (solid, gas): Not flammable

Explosive limits Not relevant.

Vapour pressure: < 0,001 Pa (25°C) (calculated)

Vapour density: Not relevant.

Relative density: 0,5 (20°C)

Solubility: Soluble in water.  
55 g/l (20°C)

Partition coefficient (n-octanol/water): log Kow: 3,18 (20°C)

Auto-ignition temperature (°C): 210°C (1013 hPa)

Decomposition temperature (°C): >200°C

Viscosity: Not relevant. Solid.

Explosive properties: None.

Oxidising properties: None.

**9.2. Other information**

Other data: Surface tension: 39 mN/m (20°C) (in water 291 mg/l)

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## SECTION 10: STABILITY AND REACTIVITY

### **10.1. Reactivity**

Reactivity: None known.

### **10.2. Chemical stability**

Stability: Stable under the prescribed storage conditions.

### **10.3. Possibility of hazardous reactions**

Hazardous Reactions: None known.

### **10.4. Conditions to avoid**

Conditions/materials to avoid: Heating.

### **10.5. Incompatible materials**

Incompatible materials: Strong oxidising substances.

### **10.6. Hazardous decomposition products**

Hazardous decomposition products: If heated to more than 200°C, the following substance(s) will be released: Alkyl bromides. Amines.

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## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

The toxicity of this substance has been assessed during REACH registration.

Acute Toxicity (Oral): Harmful if swallowed.

Acute Toxicity (Dermal): Based on available data, the classification criteria are not met.

Acute Toxicity (Inhalation): Based on available data, the classification criteria are not met.

Skin Corrosion/Irritation: Causes skin irritation.

Serious eye damage/irritation: Causes serious eye damage.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive Toxicity: Based on available data, the classification criteria are not met.

STOT - Single exposure: May cause respiratory irritation.

STOT - Repeated exposure: May cause damage to organs through prolonged or repeated exposure if swallowed.

Aspiration hazard: Based on available data, the classification criteria are not met.

Inhalation: STOT - Single exposure:: STOT SE 3  
Dust irritates the respiratory system, and may cause coughing and difficulties in breathing.

Skin contact: Skin Corrosion/Irritation: Skin Irrit. 2 (SCL: Skin Irrit. 2: C  $\geq$  2,5 %) Causes skin irritation.

Eye contact: Serious eye damage/irritation: Eye Dam. 1  
Causes serious eye damage. Immediate first aid is necessary.

Ingestion: Acute Toxicity (Oral):: Acute Tox. 4  
Harmful if swallowed. Causes stomach pain, vomiting, diarrhoea and convulsions.

Specific effects: STOT - Repeated exposure:: STOT RE 2  
May cause damage to organs through prolonged or repeated exposure if swallowed. Target organs Gastro-intestinal tract.

Toxicological data: Acute Toxicity (Oral LD50): 465 mg/kg (rat)  
Acute Toxicity (Dermal LD50): 4,3 ml/kg (~2150 mg/kg) (rabbit)  
Acute Toxicity (Inhalation): Adverse Effects: 1,8 mg/m<sup>3</sup> (mouse)  
Long Term (Oral) Adverse Effects: 75 mg/kg/day - 21 days (rat)

Additional information: Respiratory sensitisation: Data lacking.  
Skin sensitisation: Conclusive data but not sufficient for classification.  
Germ cell mutagenicity: Conclusive data but not sufficient for classification.  
Carcinogenicity: Conclusive data but not sufficient for classification.  
Reproductive Toxicity: Conclusive data but not sufficient for classification.  
Aspiration hazard: Data lacking.

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## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

The ecotoxicity of this substance has been assessed during REACH registration.

#### Ecotoxicity:

Very toxic to aquatic life.  
M = 100. (0.001 < EC50 ≤ 0.01 mg/l):

#### Freshwater fish:

LC50: 0,2 mg/l (Danio rerio, 96 hours)  
NOEC: 0,46 mg/l (Pimephales sp.)

#### Freshwater invertebrates:

EC50: 26 µg/l = 0,026 mg/l (Daphnia magna, 48 hours)  
NOEC: 23 µg/l = 0,023 mg/l (Daphnia magna, 21 days)

#### Freshwater algae:

EC50: 4,11 µg/l = 0,00411 mg/l (Pseudokirchnerella subcapitata, 72 hours)  
NOEC: 1,1 µg/l = 0,0011 mg/l (Pseudokirchnerella subcapitata, 72 hours)

#### Aquatic Microorganisms:

EC50/LC50: 19 mg/l

#### Soil Macroorganisms

NOEC: 620 mg/kg

#### Toxicity to terrestrial plants:

EC50: 0,2 mg/l

#### Soil Microorganisms

EC50/LC50: 2000 mg/kg  
NOEC: 21 mg/kg

#### Toxicity to other terrestrial organisms:

NOEC: 308 mg/kg (Chironomus riparius)

### 12.2. Persistence and degradability

#### Degradability:

Water: The product is readily biodegradable.  
Soil: Half-life: 58 days (22°C)

### 12.3. Bioaccumulative potential

#### Bioaccumulative potential:

The product is not bioaccumulating. (BCF 750)

### 12.4. Mobility in soil

#### Mobility:

The product adsorbs to soil particles.  
Koc (20°C): 31000  
log Koc (20°C): 4,49

### 12.5. Results of PBT and vPvB assessment

#### PBT/vPvB:

This substance is not classified as PBT or vPvB.

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## **12.6. Other adverse effects**

Other adverse effects: None known.

## **SECTION 13: DISPOSAL CONSIDERATIONS**

### **13.1. Waste treatment methods**

Dispose of waste and residues in accordance with local authority requirements. Waste is classified as hazardous waste.

Waste from residues: EWC-code: 07 05 07/07 06 07

## **SECTION 14: TRANSPORT INFORMATION**

### **14.1. UN number**

UN-No: 3077

### **14.2. UN proper shipping name**

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Trimethylhexadecylammonium bromid )

### **14.3. Transport hazard class(es)**

Class: 9

### **14.4. Packing group**

PG: III

### **14.5. Environmental hazards**

Marine pollutant: Yes.

Environmentally Hazardous substance: Yes.

### **14.6. Special precautions for user**

Special precautions: None known.

### **14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code**

Transport in bulk: Not relevant.

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## SECTION 15: REGULATORY INFORMATION

### **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Special provisions: As a general rule, persons under 18 years of age are not allowed to work with this product. Users must be carefully instructed in the proper work procedure, the dangerous properties of the product and the necessary safety instructions.

National regulation: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, with amendments.  
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.  
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The Control of Substances Hazardous to Health Regulations 2002 (S.I 2002 No. 2677) with amendments.  
EH40/2005, Workplace exposure limits 2005, with amendments.  
The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895).  
The Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242), with amendments.

### **15.2. Chemical Safety Assessment**

CSA status: A chemical safety assessment has been carried out.

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## SECTION 16: OTHER INFORMATION

For restrictions on use see section 15.

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The following sections contain revisions or new statements: 1, 11.

Abbreviations and acronyms used in the safety data sheet: PBT = Persistent, Bioaccumulative and Toxic.  
vPvB = very Persistent and very Bioaccumulative.  
DNEL = Derived No Effect Level.  
PNEC = Predicted No Effect Concentration.  
SCL: Specific Concentration Limit  
NOEC = No Observed Effect Concentration.  
STP = Sewage Treatment Plant.

Key literature references and sources for data: CHEMICAL SAFETY REPORT on Cetrimonium bromide

Wording of H-statements:

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H373c	May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	Very toxic to aquatic life.

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The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

Made by DHI - Environment and Toxicology, Agern Allé 5, DK-2970 Hørsholm, Denmark.  
[www.dhigroup.com](http://www.dhigroup.com).