

SAFETY DATA SHEET

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|---------------|---------------------------|-------------|------------|
| Product name: | FeF Benzalkonium Chloride | Page: | 1/11 |
| Revision: | 2019-11-05 | Print date: | 2019-11-07 |
| | | SDS-ID: | GB-EN/14.0 |

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

1.1. Product identifier

Product name: FeF Benzalkonium Chloride
 FeF Benzalkonium Chloride Ph.Eur., USP/NF
 FeF Benzalkonium Chloride Ph.Eur., USP/NF, JP

CAS-No.: 68424-85-1

EC No.: 939-253-5

REACH Reg. No: 01-2119965180-41-0009

Container size: 1 kg
 5 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.

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)

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride
Revision: 2019-11-05

Page: 2/11
Print date: 2019-11-07
SDS-ID: GB-EN/14.0

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP: Acute Tox. 4;H302 - Skin Corr. 1B;H314 - Eye Dam. 1;H318 - Aquatic Acute 1;H400 - Aquatic Chronic 1;H410

2.2. Label elements



Danger

Contains: Quaternary ammonium compounds, benzyl C12-16 (even numbered)-alkyldimethyl chlorides
EC No.: 939-253-5

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H410 Very toxic to aquatic life with long lasting effects.

P262 Do not get in eyes, on skin, or on clothing.

P273 Avoid release to the environment.

P280 Wear protective clothing, gloves, 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.

P310 Immediately call a POISON CENTER/doctor.

2.3. Other hazards

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

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

This product is a UVCB substance and its composition will be variable, so reported properties may vary or require a range of values to describe them.

CLP:

| <u>%:</u> | <u>CAS-No.:</u> | <u>EC No.:</u> | <u>REACH Reg. No:</u> | <u>Chemical name:</u> | <u>Hazard classification:</u> | <u>Notes:</u> |
|-----------|-----------------|----------------|-----------------------|--|--|---------------|
| 100 | 68424-85-1 | 939-253-5 | 01-2119965180-41-0009 | Quaternary ammonium compounds, benzyl C12-16 (even numbered)-alkyldimethyl chlorides | Acute Tox. 4;H302 Skin Corr. 1B;H314 Eye Dam. 1;H318 Aquatic Acute 1;H400 Aquatic Chronic 1;H410 | |

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride
Revision: 2019-11-05

Page: 3/11
Print date: 2019-11-07
SDS-ID: GB-EN/14.0

References: The full text for all hazard statements is displayed in section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation: Move into fresh air and keep at rest. Get medical attention if any discomfort continues.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water. In case of eczema or other skin disorders: Seek medical attention and bring these instructions.

Eye contact: Immediately flush with plenty of water. Remove any contact lenses and open eyes wide apart. Call an ambulance and continue flushing during transportation to hospital. Bring these instructions.

Ingestion: Rinse mouth with water. Do not induce vomiting. Immediately call a POISON CENTER/doctor.

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.
Water used for fire extinguishing, which has been in contact with the product, may be corrosive.

5.3. Advice for firefighters

Protective equipment for firefighters: Use air-supplied respirator during fire fighting. Severe corrosive hazard. Wear chemical protection suit.

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride
Revision: 2019-11-05

Page: 4/11
Print date: 2019-11-07
SDS-ID: GB-EN/14.0

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid contact with skin and eyes. 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 contact with skin and eyes. Change contaminated clothing.

Technical measures: Work practice should minimise contact.

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

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.

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride
Revision: 2019-11-05

Page: 5/11
Print date: 2019-11-07
SDS-ID: GB-EN/14.0

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No occupational exposure limit assigned.

8.2. Exposure controls

| | |
|---|--|
| <u>Engineering measures:</u> | Provide adequate ventilation. An eye wash bottle must be available at the work site. |
| <u>Personal protection:</u> | Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. |
| <u>Respiratory equipment:</u> | In case of inadequate ventilation or risk of inhalation of vapours, use suitable respiratory equipment with gas filter (type A2). |
| <u>Hand protection:</u> | Wear protective gloves. Nitrile gloves are recommended. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material. |
| <u>Eye protection:</u> | Wear goggles/face shield. |
| <u>Skin protection:</u> | Wear apron or protective clothing in case of splashes. |
| <u>Hygiene measures:</u> | Change contaminated clothing. Wash hands after handling. |
| <u>Environmental Exposure Controls:</u> | Not available. |

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride
Revision: 2019-11-05

Page: 6/11
Print date: 2019-11-07
SDS-ID: GB-EN/14.0

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance: Clear or white to yellowish-white solid or thick gel.
Odour: Almond.
pH: Not available.
Melting point / freezing point: ~ 29 °C
Boiling point: Not available.
Flash point: Not relevant.
Explosive limits Not relevant.
Vapour pressure: 0.002 Pa (20 °C)
Relative density: 0.929 g/cm³ (20 °C)
Solubility: Miscible with: Water and lower alcohols.
Decomposition temperature (°C): Not available.
Viscosity: Not relevant.
Explosive properties: Not considered to be explosive.

9.2. Other information

Other data: Not relevant.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity: None known.

10.2. Chemical stability

Stability: Stable under normal temperature 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 150°C, the following substance(s) will be released: Benzyl chloride and Methyl chloride.

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride
Revision: 2019-11-05

Page: 7/11
Print date: 2019-11-07
SDS-ID: GB-EN/14.0

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

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 severe skin burns and eye damage.

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

STOT - Repeated exposure: Based on available data, the classification criteria are not met.

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

Inhalation: Not relevant at normal room temperatures. When heated, harmful vapours may be formed.

Skin contact: Causes burns.

Eye contact: Causes burns. Risk of serious damage to eyes. Immediate first aid is necessary.

Ingestion: Harmful if swallowed. Causes burns. Burning pain. Increased flow of saliva (froth at the mouth) and vomiting, sometimes with bloody vomit. Restlessness, confusion and weakness, laboured breathing, bluish colouring of skin and mucous membranes, shock and unconsciousness.

Toxicological data: LD50 (oral, rat): 795 mg/kg

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride
Revision: 2019-11-05

Page: 8/11
Print date: 2019-11-07
SDS-ID: GB-EN/14.0

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity: Very toxic to aquatic life with long lasting effects.
M-factor (acute): 10
M-factor (chronic): 1

LC50 (Fish): $0.1 < LC50 \leq 1$ mg/l (96 hours)
EC50 (Daphnia): $0.01 < EC50 \leq 0.1$ mg/l (48 hours)
 $0.001 < NOEC \leq 0.01$ mg/l

12.2. Persistence and degradability

Degradability: The product is readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: Bioaccumulation: Is not expected to be bioaccumulable.

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

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

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

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride
Revision: 2019-11-05

Page: 9/11
Print date: 2019-11-07
SDS-ID: GB-EN/14.0

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

UN-No: 3261

14.2. UN proper shipping name

Proper Shipping Name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.
(Benzalkonium chloride)

14.3. Transport hazard class(es)

Class: 8

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.

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride
Revision: 2019-11-05

Page: 10/11
Print date: 2019-11-07
SDS-ID: GB-EN/14.0

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.
The Control of Substances Hazardous to Health Regulations 2002 (S.I 2002 No. 2677) with amendments.
The Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242), with amendments.
The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895).

15.2. Chemical Safety Assessment

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

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride
Revision: 2019-11-05

Page: 11/11
Print date: 2019-11-07
SDS-ID: GB-EN/14.0

SECTION 16: OTHER INFORMATION

For restrictions on use see section 15.

The following sections contain revisions or new statements: 1, 2, 3, 4, 8, 9, 12, 16.

Abbreviations and acronyms used in the safety data sheet: PBT = Persistent, Bioaccumulative and Toxic.
vPvB = very Persistent and very Bioaccumulative.
LD50 = Lethal Dose 50%.
LC50 = Lethal Concentration 50%.
EC50 = Effective Concentration 50%.
NOEC = No Observed Effect Concentration.

Wording of H-statements:

| | |
|------|---|
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

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.
