

SAFETY DATA SHEET

| | | | |
|----------------|--|-------------|------------|
| Product name: | FeF Benzalkonium Chloride Solution 50% | Page: | 1/11 |
| Revision Date: | 2023-06-28 | Print date: | 2023-11-21 |
| | | SDS-ID: | US-EN/15.2 |

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

Product identifier

Product name: FeF Benzalkonium Chloride Solution 50%
FeF Benzalkonium chloride Solution 50% Ph.Eur., USP/NF
FeF Benzalkonium chloride Solution 50% Ph.Eur., USP/NF, JP

Container size: 1 kg
5 kg
25 kg
1000 kg

Relevant identified uses of the substance or mixture and uses advised against

Application: Preservative and active ingredient in the cosmetic and pharmaceutical industries.

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

Supplier: Novo Nordisk Pharmaceuticals Industries Inc.
Building EJ, GMP Warehouse, 646 GLP OneWay
25727 Clayton, North Carolina
USA

Responsible for material safety data sheet authoring: nnprinfo@novonordiskpharmatech.com

Emergency telephone number

Emergency telephone: National Capital Poison Center: 1-800-222-1222
or

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride Solution 50%
Revision Date: 2023-06-28

Page: 2/11
Print date: 2023-11-21
SDS-ID: US-EN/15.2

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

OSHA 2012: Acute Oral Toxicity Category 4 - Skin Corrosive Category 1B - Serious Eye Damage Category 1

Label elements



Danger

Contains:

Quaternary ammonium compounds, benzyl C12-16 (even numbered)-alkyldimethyl chlorides

| | |
|--------------------|--|
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| P280 | Wear protective clothing, gloves, eye and face protection. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P260 | Do not breathe dust or mist. |
| P264 | Wash hands thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P280 | Wear protective clothing, gloves, eye and face protection. |
| P363 | Wash contaminated clothing before reuse. |
| P301 + P330 + P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P305 + P351 + P338 | 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. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container in accordance with local regulations. |

Other hazards

Very toxic to aquatic life with long lasting effects.

PBT/vPvB: This product does not contain any PBT or vPvB substances.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride Solution 50% Page: 3/11
Revision Date: 2023-06-28 Print date: 2023-11-21
SDS-ID: US-EN/15.2

The product contains: Aqueous solution of quarternary ammonium compounds.
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.

OSHA 2012:

| <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> |
|-----------|-----------------|----------------|-----------------------|--|---|---------------|
| 50 | 68424-85-1 | 939-253-5 | - | Quaternary ammonium compounds, benzyl C12-16 (even numbered)-alkyldimethyl chlorides | Acute Oral Toxicity Category 4 Skin Corrosive Category 1B Serious Eye Damage Category 1 | |

| <u>Chemical name:</u> | <u>SCL</u> | <u>M (ac)</u> | <u>M (chr)</u> |
|--|------------|---------------|----------------|
| Quaternary ammonium compounds, benzyl C12-16 (even numbered)-alkyldimethyl chlorides | | - | - |

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Inhalation: Move into fresh air and keep at rest. Get medical attention if any discomfort continues.
Inhalation of aerosols: 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. 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 taking along these instructions.

Ingestion: Immediately call a Poison Center/doctor. Rinse mouth. Do not induce vomiting. Do not drink anything without first consulting a doctor. Have these instructions at hand.

Most important symptoms and effects, both acute and delayed

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

Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Treat symptomatically.

SAFETY DATA SHEET

| | | | |
|----------------|--|-------------|------------|
| Product name: | FeF Benzalkonium Chloride Solution 50% | Page: | 4/11 |
| Revision Date: | 2023-06-28 | Print date: | 2023-11-21 |
| | | SDS-ID: | US-EN/15.2 |

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

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

Special hazards arising from the substance or mixture

Specific hazards: During fire, health hazardous gases may be formed.
Water used for fire extinguishing, which has been in contact with the product, may be corrosive.

Advice for firefighters

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid inhalation of spray mist and contact with skin and eyes. Follow precautions for safe handling described in this safety data sheet.

Environmental precautions

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

Methods and material for containment and cleaning up

Spill Cleanup Methods: Absorb spillage with suitable absorbent material. Flush contaminated area with plenty of water.

Reference to other sections

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

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Safe handling advice: Observe good chemical hygiene practices. Avoid inhalation of spray mists and contact with skin and eyes. Immediately change drenched clothing.

Technical measures: Keep the workplace clean. Use work methods which minimize aerosol production.

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

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.

Specific end use(s)

Specific use(s): Not relevant.

SAFETY DATA SHEET

| | | | |
|----------------|--|-------------|------------|
| Product name: | FeF Benzalkonium Chloride Solution 50% | Page: | 5/11 |
| Revision Date: | 2023-06-28 | Print date: | 2023-11-21 |
| | | SDS-ID: | US-EN/15.2 |

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

No occupational exposure limit assigned.

Exposure controls

| | |
|---|--|
| <u>Engineering measures:</u> | Provide adequate ventilation. Minimize the risk of formation of aerosols. 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> | Risk of inhalation of spray mist: Use respiratory equipment with particle filter, type P2. The use of filtering respirators should be limited to max. 3 hours per day. |
| <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> | Wash hands after contact. |
| <u>Environmental Exposure Controls:</u> | Not available. |

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | |
|--------------------------|--|
| <u>Form:</u> | Viscous liquid. |
| <u>Color:</u> | Colorless. |
| <u>Odor:</u> | Not available. |
| <u>pH:</u> | 5-6 (10-20 g/l) |
| <u>Boiling point:</u> | Not available. |
| <u>Flash point:</u> | Not available. |
| <u>Explosion limits:</u> | Not relevant. |
| <u>Vapor pressure:</u> | Not available. |
| <u>Relative density:</u> | ~ 0.98 |
| <u>Solubility:</u> | Miscible with: Water and lower alcohols. |
| <u>Viscosity:</u> | Not available. |

Other information

| | |
|--------------------|---------------|
| <u>Other data:</u> | Not relevant. |
|--------------------|---------------|

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride Solution 50%
Revision Date: 2023-06-28

Page: 6/11
Print date: 2023-11-21
SDS-ID: US-EN/15.2

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Reactivity: None known.

Chemical stability

Stability: Stable under normal temperature conditions.

Possibility of hazardous reactions

Hazardous Reactions: None known.

Conditions to avoid

Conditions/materials to avoid: Heating.

Incompatible materials

Incompatible materials: Strong oxidizing substances.

Hazardous decomposition products

Hazardous decomposition products: If heated to more than 302°F, the following substance(s) will be released: Benzyl chloride and Methyl chloride.

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride Solution 50%
Revision Date: 2023-06-28

Page: 7/11
Print date: 2023-11-21
SDS-ID: US-EN/15.2

SECTION 11: TOXICOLOGICAL INFORMATION

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 sensitization: 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: Inhalation of aerosols: Burning pain. Increased flow of saliva (froth at the mouth) and vomiting, sometimes with bloody vomit. Restlessness, confusion and weakness, labored breathing, bluish coloring of skin and mucous membranes, shock and unconsciousness.

Skin contact: Causes burns.

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

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, labored breathing, bluish coloring of skin and mucous membranes, shock and unconsciousness.

Toxicological data: Quaternary ammonium compounds, benzyl C12-16 (even numbered)-alkyldimethyl chlorides:
LD50 (oral, rat): 795 mg/kg

Information on other hazards

Other information: This product contains no ingredient listed on the NTP, OSHA, IARC or California Proposition 65 carcinogen lists.

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride Solution 50%
Revision Date: 2023-06-28

Page: 8/11
Print date: 2023-11-21
SDS-ID: US-EN/15.2

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity: Very toxic to aquatic life with long lasting effects.

Quaternary ammonium compounds, benzyl C12-16 (even numbered)-alkyldimethyl chlorides:

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

Persistence and degradability

Degradability: The product is readily biodegradable.

Bioaccumulative potential

Bioaccumulative potential: Bioaccumulation: Is not expected to be bio-accumulable.

Mobility in soil

Mobility: No data available.

Results of PBT and vPvB assessment

PBT/vPvB: This product does not contain any PBT or vPvB substances.

Other adverse effects

Other adverse effects: None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

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

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride Solution 50%
Revision Date: 2023-06-28

Page: 9/11
Print date: 2023-11-21
SDS-ID: US-EN/15.2

SECTION 14: TRANSPORT INFORMATION

UN number

UN-No: 3265

UN proper shipping name

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

Transport hazard class(es)

Class: 8

Packing group

PG: II

Environmental hazards

Marine pollutant: Yes.

Environmentally Hazardous substance: Yes.

Special precautions for user

Special precautions: None known.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk: Not relevant.

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride Solution 50%
Revision Date: 2023-06-28

Page: 10/11
Print date: 2023-11-21
SDS-ID: US-EN/15.2

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Special provisions:

All chemicals included in the product are TSCA listed.
SARA Section 302: Not listed.
SARA Section 304: Not listed.
SARA Section 313: Not listed.
CERCLA: Not listed.

NFPA Rating: Health:3 Fire:0 Reactivity:1 Other:-

State and local regulation may apply.

National regulation:

The following lists have been checked:
The Code of Federal Regulation, Title 29, part 1910. Occupational Safety and Health Standards, Hazard Communication, with amendments.
Threshold Limit Values (2023), ACGIH, by the American Conference on Governmental Industrial Hygienists.
The Code of Federal Regulation, Title 29, part 1910. Occupational Safety and Health Standards, Air contaminants (OSHA), with amendments.
NIOSH Pocket Guide to Chemical Hazards.
The Code of Federal Regulation, Title 40, part 261.33. Identification and listing of hazardous waste.
The Code of Federal Regulation. Title 40, part 372.65. Toxic Chemical Release Reporting: Community Right to Know.
The Code of Federal Regulation. Title 40, part 355 - Emergency Planning and Notification.
The Code of Federal Regulation. Title 40, part 302.4. Designation, Reportable Quantities, and Notification.
The Code of Federal Regulation. Title 40, part 68.130. Chemical Accident Prevention Provisions.
U.S. Department of health and human services: 2016 - Report on Carcinogens - 15th Edition.
International Agency for Research on Cancer (IARC): IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Lyon: IARC, World Health Organization.
State of California. Environmental Protection Agency. California Proposition 65, with amendments.

SAFETY DATA SHEET

Product name: FeF Benzalkonium Chloride Solution 50%
Revision Date: 2023-06-28

Page: 11/11
Print date: 2023-11-21
SDS-ID: US-EN/15.2

SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions. 1, 16.

Abbreviations and acronyms used in the safety data sheet: EC50 = Effective Concentration 50%.
LC50 = Lethal Concentration 50%.
LD50 = Lethal Dose 50%.
M(ac) = M-factor acute toxicity.
M(chr) = M-factor chronic toxicity.
NOEC = No Observed Effect Concentration.
PBT = Persistent, Bioaccumulative and Toxic.
SCL = Specific Concentration Limit.
STOT = Specific Target Organ Toxicity.
vPvB = very Persistent and very Bioaccumulative.

Additional information: Classification according to HCS 2012: Calculation method.

Date of compilation: 11-21-2023

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.
