

SAFETY DATA SHEET

Creation Date 13-May-2014

Revision Date 19-Dec-2025

Revision Number 6

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

1. Identification

| | |
|---------------------|---|
| Product Name | (2-Chloroethyl)trimethylammonium chloride |
| Cat No. : | AC215420000; AC215420250; AC215421000 |
| CAS No | 999-81-5 |
| Synonyms | Chlorocholine chloride |

Recommended Use
Uses advised against

Laboratory chemicals.
Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

| | |
|-----------------------|------------|
| Acute oral toxicity | Category 4 |
| Acute dermal toxicity | Category 3 |

Label Elements

Signal Word
Danger

Hazard Statements
Harmful if swallowed
Toxic in contact with skin

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection

Skin

IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor if you feel unwell
Take off immediately all contaminated clothing
Take off contaminated clothing and wash before reuse

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Storage

Store locked up

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None identified

Hazards classified under paragraph (d)(1)(ii) of 1910.1200

No information available

3. Composition/information on Ingredients

| Component | CAS No | Weight % |
|----------------------|----------|----------|
| Chlormequat chloride | 999-81-5 | <=100 |

4. First-aid measures

General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms and effects

None reasonably foreseeable.

Notes to Physician

Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam.

Unsuitable Extinguishing Media No information available

Flash Point Method - No information available
No information available

Autoignition Temperature No information available
Explosion Limits

Upper No data available
Lower No data available

Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Nitrogen oxides (NO_x). Carbon monoxide (CO). Carbon dioxide (CO₂).

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

| NFPA | Health | Flammability | Instability | Physical hazards |
|-------------|---------------|---------------------|--------------------|-------------------------|
| | 3 | 1 | 1 | N/A |

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

Environmental Precautions Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

7. Handling and Storage

Handling Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere. Air sensitive. Incompatible Materials. Strong oxidizing agents.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limit established by the region specific regulatory bodies.

Engineering Measures Ventilation systems.

Personal Protective Equipment

| | |
|---------------------------------|---|
| Eye/face Protection | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. |
| Skin and body protection | Wear appropriate protective gloves and clothing to prevent skin exposure. |
| Respiratory Protection | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |
| Recommended Filter type: | Particulates filter conforming to EN 143. |
| Hygiene Measures | Handle in accordance with good industrial hygiene and safety practice. |

9. Physical and chemical properties

Appearance

| <u>Physical State</u> | Solid | <u>Remarks</u> | <u>Method</u> |
|--|---------------------------------|----------------|--|
| <u>Color</u> | Off-white | | |
| <u>Odor</u> | Odorless | | |
| <u>Odor Threshold</u> | No information available | | |
| <u>Property</u> | <u>Values</u> | | |
| <u>Melting Point/Range</u> | 239 - 243 °C / 462.2 - 469.4 °F | | |
| <u>Softening Point</u> | No data available | | |
| <u>Boiling Point/Range</u> | No information available | | |
| <u>Flash Point</u> | No information available | | Method - No information available |
| <u>Flammability (liquid)</u> | Not applicable | | |
| <u>Flammability (solid,gas)</u> | No information available | Solid | |
| <u>Explosion Limits</u> | No data available | | |
| <u>Autoignition Temperature</u> | No data available | | |
| <u>Decomposition Temperature</u> | No data available | | |
| <u>pH</u> | Not applicable | | |
| <u>Viscosity</u> | Not applicable | Solid | |
| <u>Water Solubility</u> | 740 g/L (20°C) | | |
| <u>Solubility in other solvents</u> | No information available | | |
| <u>Partition Coefficient (n-octanol/water)</u> | <u>log Pow</u> | | |
| Component | 2.2 | | |
| Chloromequat chloride | | | |
| <u>Vapor Pressure</u> | No data available | | |
| <u>Density / Specific Gravity</u> | No data available | | |
| <u>Bulk Density</u> | No data available | | |
| <u>Vapor Density</u> | Not applicable | Solid | |
| <u>Particle characteristics</u> | No data available | | |
| <u>Other Information</u> | | | |
| <u>Molecular Formula</u> | C5 H13 Cl2 N | | |
| <u>Molecular Weight</u> | 158.07 | | |
| <u>Evaporation Rate</u> | Not applicable - Solid | | |

10. Stability and reactivity

| | |
|------------------------|--|
| Reactive Hazard | None known, based on information available |
| Stability | Hygroscopic. |

Conditions to Avoid Incompatible products. Excess heat. Exposure to moist air or water.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Information on expected route of exposure

Inhalation Not an expected route of exposure.

Ingestion May be harmful if swallowed.

Eyes Avoid contact with eyes.

Skin Avoid contact with skin. Harmful in contact with skin.

Toxicology data for the components

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|----------------------|-------------------|----------------------|---|
| Chlormequat chloride | 600 mg/kg (Rat) | 232 mg/kg (Rabbit) | LC50 > 5200 mg/m ³ (Rat) 4 h |

Toxicologically Synergistic Products No information available

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity;

The table below indicates whether each agency has listed any ingredient as a carcinogen

| Component | CAS No | IARC | NTP | ACGIH | OSHA | Mexico |
|----------------------|----------|------------|------------|------------|------------|------------|
| Chlormequat chloride | 999-81-5 | Not listed |

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs None known.

(j) aspiration hazard; Not applicable
Solid

Symptoms / effects, both acute and delayed No information available.

Other Adverse Effects The toxicological properties have not been fully investigated.

Endocrine Disrupting Properties This product does not contain any known or suspected endocrine disruptors.

12. Ecological information

Ecotoxicity

Contains a substance which is: Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|----------------------|--|--|------------|--|
| Chlormequat chloride | EC50: = 5747 mg/L, 96h (Chlorella fusca) | LC50: > 100 mg/L, 96h static (Cyprinus carpio) LC50: > 100 mg/L, 96h static (Lepomis macrochirus) LC50: > 100 mg/L, 96h static (Pimephales promelas) LC50: > 100 mg/L, 96h static (Oncorhynchus mykiss) | Not listed | EC50: 14.9 - 19.2 mg/L, 48h Static (Daphnia magna) EC50: = 16.9 mg/L, 48h (Daphnia magna) |

Persistence and Degradability Persistence is unlikely

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

| Component | log Pow |
|----------------------|---------|
| Chlormequat chloride | 2.2 |

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

| | |
|--------------------------------|---|
| UN-No | UN2811 |
| Proper Shipping Name | Toxic solid, organic, n.o.s. |
| Technical Shipping Name | (2-Chloroethyl)trimethylammonium chloride |
| Hazard Class | 6.1 |
| Packing Group | III |

TDG

| | |
|--------------------------------|---|
| UN-No | UN2811 |
| Proper Shipping Name | Toxic solid, organic, n.o.s. |
| Technical Shipping Name | (2-Chloroethyl)trimethylammonium chloride |
| Hazard Class | 6.1 |
| Packing Group | III |

IATA

| | |
|--------------------------------|---|
| UN-No | UN2811 |
| Proper Shipping Name | TOXIC SOLID, ORGANIC, N.O.S.* |
| Technical Shipping Name | (2-Chloroethyl)trimethylammonium chloride |
| Hazard Class | 6.1 |
| Packing Group | III |

IMDG/IMO

| | |
|-----------------------------|------------------------------|
| UN-No | UN2811 |
| Proper Shipping Name | Toxic solid, organic, n.o.s. |

Technical Shipping Name (2-Chloroethyl)trimethylammonium chloride
Hazard Class 6.1
Packing Group III

15. Regulatory Information

United States of America Inventory

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|----------------------|----------|------|---|-----------------------------|
| Chlormequat chloride | 999-81-5 | X | ACTIVE | - |

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component | CAS No | DSL | NDSL | EINECS | PICCS | ENCS | ISHL | AICS | IECSC | KECL |
|----------------------|----------|-----|------|-----------|-------|------|------|------|-------|----------|
| Chlormequat chloride | 999-81-5 | X | - | 213-666-4 | - | - | X | - | X | KE-05937 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

| Component | Hazardous Substances RQs | CERCLA Extremely Hazardous Substances RQs | SARA Reportable Quantity (RQ) |
|----------------------|--------------------------|---|-------------------------------|
| Chlormequat chloride | - | 100 lb | - |

California Proposition 65 This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know
Regulations**

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|----------------------|---------------|------------|--------------|----------|--------------|
| Chlormequat chloride | X | X | X | - | - |

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH Not applicable

| Component | CAS No | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|----------------------|----------|---|---|---|
| Chlormequat chloride | 999-81-5 | - | - | - |

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

| Component | CAS No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|----------------------|----------|----------|------------------------------|---------------------------|--|
| Chlormequat chloride | 999-81-5 | Listed | Not applicable | Not applicable | Not applicable |

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Other International Regulations

| Component | CAS No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|----------------------|----------|---|--|----------------------------|------------------------------------|
| Chlormequat chloride | 999-81-5 | Not applicable | Not applicable | Not applicable | Not applicable |

16. Other Information

Prepared By Product stewardship (Regulatory Affairs)
Thermo Fisher Scientific
email - begel.sdsdesk@thermofisher.com

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Revision Summary Updated to the U.S. Department of Labor's Occupational Safety and Health Administration

(OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS