

Australian statement of hazardous nature : Classified as hazardous according to criteria of Safe Work Australia

## Section 1 - Identification

**Product Name** (2-Chloroethyl)trimethylammonium chloride  
**CAS No** 999-81-5  
**Synonyms** Chlorocholine chloride

**Product Code** A15630  
**Address** ThermoFisher Scientific Australia Pty Ltd  
 5 Caribbean Drive, Scoresby  
 VICTORIA 3179, Australia  
**Emergency Tel.** CHEMTREC®  
 03 9757 4559 or +613 9757 4559  
**Telephone / Fax Numbers** Tel: 1300 735 292  
 Fax: 1800 067 639  
**E-mail address** ANZinfo@thermofisher.com

**Recommended Use** Laboratory chemicals.

**Uses advised against** This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.  
 This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

## Section 2 - Hazard(s) Identification

### Classification under Safe Work Australia

Classified as hazardous according to criteria of Safe Work Australia

#### Physical hazards

No hazards identified

#### Health hazards

Acute Oral Toxicity  
 Acute Dermal Toxicity

Category 4  
 Category 3

#### Environmental hazards

No hazards identified

#### Label Elements



Skull and Crossbones

**Signal Word**

**Danger**

**Hazard Statements**

H302 - Harmful if swallowed  
H311 - Toxic in contact with skin

**Precautionary Statements**

P264 - Wash face, hands and any exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P312 - Call a POISON CENTER or doctor if you feel unwell  
P330 - Rinse mouth  
P361 + P364 - Take off immediately all contaminated clothing and wash it before reuse  
P405 - Store locked up  
P501 - Dispose of contents/ container to an approved waste disposal plant

**Other information**

Toxic to terrestrial vertebrates

## Section 3 - Composition and Information on Ingredients

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

## Section 4 - First Aid Measures

<b>Inhalation</b>	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.
<b>Ingestion</b>	Do NOT induce vomiting. Call a physician or poison control center immediately.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>General Advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Self-Protection of the First Aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

<b>First Aid Facilities</b>	Eyewash, safety shower and washroom.
<b>Most important symptoms and effects</b>	None reasonably foreseeable.
<b>Notes to Physician</b>	Treat symptomatically.

## Section 5 - Fire Fighting Measures

### Suitable Extinguishing Media

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam.

### Extinguishing media which must not be used for safety reasons

No information available.

### Hazardous Decomposition Products

Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

### Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

### Special protective equipment and precautions for fire fighters

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.

## Section 6 - Accidental Release Measures

### Emergency procedures

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

#### Clean-up methods - small spillage

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

#### Clean-up methods - large spillage

Typically only supplied in small quantities as packaged goods.

If extremely toxic or used in larger quantities ensure a spillage action plan is in place. Evacuate area. Control the source and/or contain the spill if safe and able to do so. Use temporary diking, sand bags, dry sand, earth or proprietary booms/absorbent pads if available. Obtain advice on containment, neutralisation and clean-up from local emergency responders.

### Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## Section 7 - Handling and Storage

### Precautions for Safe 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.

### Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere. Protect from moisture.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

## Section 8 - Exposure Controls and Personal Protection

### Exposure limits

The product does not contain any hazardous materials with occupational exposure limits established.

### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

### Exposure Controls

#### Engineering Measures

Ventilation systems.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

#### Eye Protection

Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

#### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Natural rubber	See manufacturers	-	AS/NZS 2161	(minimum requirement)
Nitrile rubber	recommendations			
Neoprene				
PVC				

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

#### Skin and body protection

Long sleeved clothing

#### Respiratory Protection

Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices

#### Recommended Filter type: Recommended half mask:-

Particulates filter conforming to EN 143 (or AUS/NZ equivalent)  
Particle filtering: EN149:2001 (or AUS/NZ equivalent)  
When RPE is used a face piece Fit Test should be conducted

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

### Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

## Section 9 - Physical and Chemical Properties

### Information on basic physical and chemical properties

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

## Section 10 - Stability and Reactivity

<b>Reactivity</b>	None known, based on information available
<b>Stability</b>	Hygroscopic.
<b>Conditions to Avoid</b>	Incompatible products, Excess heat, Exposure to moist air or water.
<b>Incompatible Materials</b>	Strong oxidizing agents.
<b>Hazardous Decomposition Products</b>	Nitrogen oxides (NO <sub>x</sub> ). Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ).
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.

## Section 11 - Toxicological Information

### Information on Toxicological Effects

#### Product Information

<b>(a) acute toxicity;</b>	
Oral	Category 4
Dermal	Category 3
Inhalation	Based on available data, the classification criteria are not met

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

(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; No data available

There are no known carcinogenic chemicals in this product

(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

## Section 12 - Ecological Information

### Ecotoxicity effects

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

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Chlormequat chloride	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)	EC50: 14.9 - 19.2 mg/L, 48h Static (Daphnia magna) EC50: = 16.9 mg/L, 48h (Daphnia magna)	EC50: = 5747 mg/L, 96h (Chlorella fusca)	

### Persistence and Degradability

#### Persistence

Persistence is unlikely.

#### Degradation in sewage treatment plant

Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

#### Bioaccumulative Potential

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Chlormequat chloride	2.2	No data available

### Mobility

The product is water soluble, and may spread in water systems. : Will likely be mobile in the environment due to its water solubility Highly mobile in soils

<b>Endocrine Disruptor Information</b>	This product does not contain any known or suspected endocrine disruptors
<b>Persistent Organic Pollutant</b>	This product does not contain any known or suspected substance
<b>Ozone Depletion Potential</b>	This product does not contain any known or suspected substance

## Section 13 - Disposal Considerations

<b>Waste from Residues/Unused Products</b>	Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.
<b>Contaminated Packaging</b>	Dispose of this container to hazardous or special waste collection point.
<b>Other Information</b>	Chemical wastes should be disposed through a licensed commercial waste collection service. Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

## Section 14 - Transport Information

### IMDG/IMO

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

### ADG

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

### IATA

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

<b>Environmental hazards</b>	No hazards identified
<b>Special Precautions</b>	No special precautions required
<b>Additional information</b>	None known

## Section 15 - Regulatory Information

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

<b>National Regulations</b>	<b>Australia</b>
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See section 8 for national exposure control parameters.

**Standard for the Uniform Scheduling of Medicines and Poisons**

Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons.

Component	Standard for the Uniform Scheduling of Medicines and Poisons
Chlormequat chloride - 999-81-5	Schedule 6 listed - present

**Australian - Illicit Drug Precursors/Reagents Substance List**

This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

**Chemicals of Security Concern**

This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

**National pollutant inventory** Not applicable**Prohibition or notification/licensing requirements**

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

**International Inventories**

Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	ISHL	IECSC	KECL
Chlormequat chloride	-	X	213-666-4	-	X	X	-	-	-	X	X	KE-05937

**Legend:** X - Listed. '-' - Not Listed. **KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**International Regulations****Ozone Depletion Potential** This product does not contain any known or suspected substance**Persistent Organic Pollutant** This product does not contain any known or suspected substance**Rotterdam Convention (PIC)** Not applicable**Basel convention on the control of transboundary movements of hazardous wastes and their disposal**

Not applicable.

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Chlormequat chloride	999-81-5	Listed	Not applicable	Not applicable	Not applicable

**Authorisation/Restrictions according to EU REACH** Not applicable



## Section 16 - Other Information

### Legend

<b>AICS</b> - Australian Inventory of Chemical Substances	<b>NZIoC</b> - New Zealand Inventory of Chemicals
<b>TSCA</b> - United States Toxic Substances Control Act Section 8(b) Inventory	<b>EINECS/ELINCS</b> - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
<b>DSL/NDL</b> - Canadian Domestic Substances List/Non-Domestic Substances List	<b>ENCS</b> - Japanese Existing and New Chemical Substances
<b>IECSC</b> - Chinese Inventory of Existing Chemical Substances	<b>KECL</b> - Korean Existing and Evaluated Chemical Substances
<b>PICCS</b> - Philippines Inventory of Chemicals and Chemical Substances	<b>CAS</b> - Chemical Abstracts Service
<b>TWA</b> - Time Weighted Average	<b>ACGIH</b> - American Conference of Governmental Industrial Hygienists Predicted No Effect Concentration (PNEC)
<b>IARC</b> - International Agency for Research on Cancer	<b>IMO/IMDG</b> - International Maritime Organization/International Maritime Dangerous Goods Code
<b>ICAO/IATA</b> - International Civil Aviation Organization/International Air Transport Association	<b>ADG</b> Australian Code for the Transport of Dangerous Goods by Road and Rail
<b>MARPOL</b> - International Convention for the Prevention of Pollution from Ships	<b>OECD</b> - Organisation for Economic Co-operation and Development
<b>NZS 5433:2012</b> - Transport of Dangerous Goods on Land	<b>LC50</b> - Lethal Concentration 50%
<b>LD50</b> - Lethal Dose 50%	<b>ATE</b> - Acute Toxicity Estimate
<b>EC50</b> - Effective Concentration 50%	<b>RPE</b> - Respiratory Protective Equipment
<b>WEL</b> - Workplace Exposure Limit	<b>NOEC</b> - No Observed Effect Concentration
<b>DNEL</b> - Derived No Effect Level	<b>BCF</b> - Bioconcentration factor
<b>POW</b> - Partition coefficient Octanol:Water	<b>PBT</b> - Persistent, Bioaccumulative, Toxic
<b>vPvB</b> - very Persistent, very Bioaccumulative	
<b>VOC</b> - (Volatile Organic Compound)	

### **Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>  
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

### **Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

**Revision Date** 18-Nov-2022  
**Revision Summary** SDS sections updated.

**This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).**

### **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 Safety Data Sheet