# SAFETY DATA SHEETS

**According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition**

Version: 1.0
Creation Date: Aug 12, 2017
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## 1.Identification

### 1.1 GHS Product identifier

**Product name** cetyltrimethylammonium chloride

### 1.2 Other means of identification

**Product number** -
**Other names** Hexadecyltrimethylammonium chloride

### 1.3 Recommended use of the chemical and restrictions on use

**Identified uses** For industry use only. Adhesives and sealant chemicals,Intermediates,Surface active agents
**Uses advised against** no data available

### 1.4 Supplier's details

**Company** Echemi.com
**Address** Echemi.com
**Telephone** Echemi.com
**Fax** Echemi.com

### 1.5 Emergency phone number

**Emergency phone number** Echemi.com
**Service hours** Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## 2.Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Oral, Category 4
Acute toxicity - Dermal, Category 3
Skin corrosion, Category 1C
Serious eye damage, Category 1
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**

**Signal word** Danger
**Hazard statement(s)** H302 Harmful if swallowed
H311 Toxic in contact with skin
H314 Causes severe skin burns and eye damage
H410 Very toxic to aquatic life with long lasting effects

**Precautionary statement(s)**
**Prevention** P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
**Response** P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/…if you feel unwell.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P312 Call a POISON CENTER/doctor/…if you feel unwell.
P321 Specific treatment (see ... on this label).
P361+P364 Take off immediately all contaminated clothing and wash it 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 [or shower].
P363 Wash contaminated clothing before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310 Immediately call a POISON CENTER/doctor/…
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391 Collect spillage.
**Storage** P405 Store locked up.
**Disposal** P501 Dispose of contents/container to ...

### 2.3 Other hazards which do not result in classification

none

## 3.Composition/information on ingredients

### 3.1 Substances

| Chemical name | Common names and synonyms | CAS number | EC number | Concentration |
|---|---|---|---|---|
| cetyltrimethylammonium chloride | cetyltrimethylammonium chloride | 112-02-7 | none | 100% |

## 4.First-aid measures

### 4.1 Description of necessary first-aid measures

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms/effects, acute and delayed

Ingestion may produce toxic effects. Contact with eyes or skin may cause severe damage. (USCG, 1999)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

no data available

## 5.Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**

...DRY CHEM, /ALCOHOL/ FOAM, OR CARBON DIOXIDE. WATER MAY BE INEFFECTIVE ON FIRE. COOL EXPOSED CONTAINERS WITH WATER. /CETYLTRIMETHYLAMMONIUM CHLORIDE SOLN/

### 5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Irritating fumes of hydrogen chloride may form in fires. Behavior in Fire: Solvent vapors are heavier than air and may travel to a source of ignition and flash back. (USCG, 1999)

### 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

## 6.Accidental release measures

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

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

## 7.Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

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

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

## 8.Exposure controls/personal protection

### 8.1 Control parameters

**Occupational Exposure limit values**

no data available

**Biological limit values**

no data available

### 8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

**Eye/face protection**

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Respiratory protection**

Wear dust mask when handling large quantities.

**Thermal hazards**

no data available

## 9.Physical and chemical properties

| | |
|---|---|
| **Physical state** | white crystalline powder |
| **Colour** | no data available |
| **Odour** | no data available |
| **Melting point/ freezing point** | 232-234ºC |
| **Boiling point or initial boiling point and boiling range** | 100ºC |
| **Flammability** | no data available |

| | |
|---|---|
| **Lower and upper explosion limit / flammability limit** | IN AIR: 2%-12% /ISOPROPYL ALCOHOL SOLN OF CETYLTRIMETHYLAMMONIUM CHLORIDE/ |
| **Flash point** | 20.56°C (USCG, 1999) |
| **Auto-ignition temperature** | 398.89°C (USCG, 1999) |
| **Decomposition temperature** | no data available |
| **pH** | no data available |
| **Kinematic viscosity** | no data available |
| **Solubility** | In water:Soluble |
| **Partition coefficient n-octanol/water (log value)** | log Kow= 3.23 |
| **Vapour pressure** | no data available |
| **Density and/or relative density** | 0.968g/mLat 25°C |
| **Relative vapour density** | no data available |
| **Particle characteristics** | no data available |

## 10.Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

HEXADECYLTRIMETHYLAMMONIUM CHLORIDE is a quaternary ammonium compound. Therefore it has a permanently charged nitrogen atom with four alkyl or aryl groups on it. Compounds in this group are generally soluble in water and are near pH 7 (neutral). They do not undergo the acid-base reactions typical of primary, secondary, or tertiary ammonium ions. Quaternary ammonium salts often serve as catalysts in reactions. They are incompatible with many strong oxidizers and reducing agents, such as metal hydrides, alkali/active metals, and organometallics.

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /hydrogen chloride and nitrogen oxides/.

## 11.Toxicological information

**Acute toxicity**

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

no data available

**Reproductive toxicity**

no data available

**STOT-single exposure**

no data available

**STOT-repeated exposure**

no data available

**Aspiration hazard**

no data available

## 12.Ecological information

### 12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

### 12.2 Persistence and degradability

THE CATIONIC SURFACTANTS BIODEGRADATION IN SEWAGE AND RIVER WATER WAS STUDIED, MEASURING THE REDUCTION OF THE ACTIVE SUBSTANCE BY A COLORIMETRIC METHOD USING SODIUM ALIZARINE SULFONATE.

### 12.3 Bioaccumulative potential

An estimated BCF of 71 was calculated for trimethylhexadecylammonium chloride(SRC), using an estimated log Kow of 3.23(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is moderate.

### 12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc for trimethylhexadecylammonium chloride can be estimated to be 2.2X10+5(SRC). According to a classification scheme(2), this estimated Koc value suggests that trimethylhexadecylammonium chloride is expected to immobile in soil.

### 12.5 Other adverse effects

no data available

## 13.Disposal considerations

### 13.1 Disposal methods

**Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

**Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## 14.Transport information

### 14.1 UN Number

ADR/RID: UN3082 IMDG: UN3082 IATA: UN3082

### 14.2 UN Proper Shipping Name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

### 14.3 Transport hazard class(es)

ADR/RID: 9 IMDG: 9 IATA: 9

### 14.4 Packing group, if applicable

ADR/RID: III IMDG: III IATA: III

### 14.5 Environmental hazards

ADR/RID: yes IMDG: yes IATA: yes

### 14.6 Special precautions for user

no data available

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

no data available

## 15.Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

| Chemical name | Common names and synonyms | CAS number | EC number |
|---|---|---|---|
| cetyltrimethylammonium chloride | cetyltrimethylammonium chloride | 112-02-7 | none |
| **European Inventory of Existing Commercial Chemical Substances (EINECS)** | | | Listed. |
| **EC Inventory** | | | Listed. |
| **United States Toxic Substances Control Act (TSCA) Inventory** | | | Listed. |
| **China Catalog of Hazardous chemicals 2015** | | | Not Listed. |
| **New Zealand Inventory of Chemicals (NZIoC)** | | | Listed. |
| **Philippines Inventory of Chemicals and Chemical Substances (PICCS)** | | | Listed. |
| **Vietnam National Chemical Inventory** | | | Listed. |
| **Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)** | | | Listed. |

## 16.Other information

**Information on revision**

**Creation Date** Aug 12, 2017
**Revision Date** Aug 12, 2017

**Abbreviations and acronyms**

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

**References**


- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/