

## Chemical Safety Data Sheet MSDS / SDS

## Chloroacetyl chloride SDS

Revision Date:2024-04-25 Revision Number:1

|           |            |            |            |            |            |            |            |
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name: Chloroacetyl chloride

CAS: 79-04-9

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

Relevant identified uses: For R&amp;D use only. Not for medicinal, household or other use.

Uses advised against: none

**Company Identification**

Company: Chemicalbook.in

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**SECTION 2: Hazards identification****Classification of the substance or mixture**

Acute toxicity - Category 3, Oral

Acute toxicity - Category 3, Dermal

Skin corrosion, Sub-category 1A  
Acute toxicity - Category 3, Inhalation  
Specific target organ toxicity - repeated exposure, Category 1  
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

### GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

### Hazard statement(s)

H301 Toxic if swallowed  
H311 Toxic in contact with skin  
H314 Causes severe skin burns and eye damage  
H331 Toxic if inhaled  
H372 Causes damage to organs through prolonged or repeated exposure  
H400 Very toxic to aquatic life

### 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/hearing protection/...  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.

### Response

P301+P316 IF SWALLOWED: Get emergency medical help immediately.  
P321 Specific treatment (see ... on this label).  
P330 Rinse mouth.  
P302+P352 IF ON SKIN: Wash with plenty of water/...  
P316 Get emergency medical help immediately.  
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.  
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P363 Wash contaminated clothing before reuse.  
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.  
P319 Get medical help if you feel unwell.  
P391 Collect spillage.

#### **Storage**

P405 Store locked up.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

#### **Disposal**

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

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

no data available

### **SECTION 3: Composition/information on ingredients**

#### **Substance**

|                            |                       |
|----------------------------|-----------------------|
| Chemical name:             | Chloroacetyl chloride |
| Common names and synonyms: | Chloroacetyl chloride |
| CAS number:                | 79-04-9               |
| EC number:                 | 201-171-6             |
| Concentration:             | 100%                  |

### **SECTION 4: First aid measures**

#### **Description of necessary first-aid measures**

#### **If inhaled**

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

**Following skin contact**

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

**Following eye contact**

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

**Following ingestion**

Rinse mouth. Do NOT induce vomiting. Give nothing to drink. Refer for medical attention . See Notes.

**Most important symptoms/effects, acute and delayed**

Inhalation causes severe irritation of upper respiratory system. External contact causes severe irritation of eyes and skin. Ingestion causes severe irritation of mouth and stomach. (USCG, 1999)

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

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool . Cover skin burns with dry sterile dressings after decontamination . Chlorine and related compounds

**SECTION 5: Firefighting measures****Suitable extinguishing media**

Do not use water on adjacent fires.

**Specific hazards arising from the chemical**

Special Hazards of Combustion Products: Heat of fire can cause decomposition, with evolution of highly toxic and irritating hydrogen chloride and phosgene vapors. Behavior in Fire: Highly irritating (tear gas) vapors released when heated. Hydrogen chloride gas is released if in contact with water. (USCG, 1999)

**Special protective actions for fire-fighters**

In case of fire in the surroundings, use appropriate extinguishing media. In case of fire: keep drums, etc., cool by spraying with

water. NO direct contact with water.

## **SECTION 6: Accidental release measures**

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

Cover the spilled material with dry sand. Collect leaking and spilled liquid in sealable containers as far as possible. Then store and dispose of according to local regulations. NEVER direct water jet on liquid. Personal protection: complete protective clothing including self-contained breathing apparatus.

### **Environmental precautions**

Cover the spilled material with dry sand. Collect leaking and spilled liquid in sealable containers as far as possible. Then store and dispose of according to local regulations. NEVER direct water jet on liquid. Personal protection: complete protective clothing including self-contained breathing apparatus.

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

Approach release from upwind. Keep water away from release. Stop or control the leak, if this can be done without undue risk. Prompt cleanup and removal is necessary. Control runoff and isolate discharged material for proper disposal.

## **SECTION 7: Handling and storage**

### **Precautions for safe handling**

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

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

Separated from food and feedstuffs. See Chemical Dangers. Dry. Keep in a well-ventilated room. Store in a cool, dry, well-ventilated location. Separate from combustibles, alkalis, alcohols.

## **SECTION 8: Exposure controls/personal protection**

### **Control parameters**

### **Occupational Exposure limit values**

TLV: 0.05 ppm as TWA; 0.15 ppm as STEL; (skin).MAK skin absorption (H)

#### **Biological limit values**

no data available

#### **Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

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

##### **Eye/face protection**

Wear face shield or eye protection in combination with breathing protection.

##### **Skin protection**

Protective gloves. Protective clothing.

##### **Respiratory protection**

Use ventilation, local exhaust or breathing protection.

##### **Thermal hazards**

no data available

### **SECTION 9: Physical and chemical properties and safety characteristics**

|                               |   |
|-------------------------------|---|
| Physical state:               | Chloroacetyl chloride is a colorless to light yellow liquid with a very pungent odor. Very toxic by inhalation. Corrosive to metals and tissue. |
| Colour:                       | Colorless liquid  |
| Odour:                        | Sharp, pungent, irritating  |
| Melting point/freezing point: | 262°C(lit.)   |

|   |                          |
|---|--------------------------|
| Boiling point or initial boiling point and boiling range: | 105 °C                   |
| Flammability:   | Noncombustible Liquid    |
| Lower and upper explosion limit/flammability limit:       | no data available        |
| Flash point:  | 42 °C(lit.)              |
| Auto-ignition temperature:                                | no data available        |
| Decomposition temperature:                                | no data available        |
| pH:   | no data available        |
| Kinematic viscosity:                                      | no data available        |
| Solubility:   | Decomposes (NIOSH, 2016) |
| Partition coefficient n-octanol/water:                    | no data available        |
| Vapour pressure:  | 60 mm Hg ( 41.5 °C)      |
| Density and/or relative density:                          | 1.42                     |
| Relative vapour density:                                  | 3.9 (vs air)             |
| Particle characteristics:                                 | no data available        |

## SECTION 10: Stability and reactivity

### Reactivity

Decomposes on heating. This produces toxic and corrosive fumes including phosgene and hydrogen chloride. Reacts violently with

water, alcohols, powdered metals and many organics. This generates toxic, fire and explosion hazard. Contact with air generates corrosive gas.

#### **Chemical stability**

no data available

#### **Possibility of hazardous reactions**

Not combustible, but if involved in a fire decomposes to produce hydrogen chloride. The vapour is heavier than air. CHLOROACETYL CHLORIDE reacts rapidly with water. Incompatible with strong oxidizing agents, alcohols, bases (including amines). May react vigorously or explosively if mixed with diisopropyl ether or other ethers in the presence of trace amounts of metal salts [J. Haz. Mat., 1981, 4, 291].

#### **Conditions to avoid**

no data available

#### **Incompatible materials**

Reacts with water to produce hydrochloric and monochloroacetic acids. Reacts with alkalis and alcohols.

#### **Hazardous decomposition products**

Not combustible, but if involved in a fire decomposes to produce hydrogen chloride.

### **SECTION 11: Toxicological information**

#### **Acute toxicity**

Oral: LD50 Rat oral 208 mg/kg

Inhalation: LC50 Rat inhalation 1000 ppm/4 hr

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**

Lachrymation. The substance is corrosive to the skin and respiratory tract. The substance is irritating to the eyes. Corrosive on ingestion. Inhalation of the vapour or aerosol may cause lung oedema. See Notes. The substance may cause effects on the cardiovascular system. Exposure far above the OEL could cause death. The effects may be delayed. Medical observation is indicated.

**STOT-repeated exposure**

Repeated or prolonged contact with skin may cause dermatitis. Repeated or prolonged inhalation may cause effects on the lungs.

**Aspiration hazard**

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

**SECTION 12: Ecological information****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

#### **Persistence and degradability**

no data available

#### **Bioaccumulative potential**

An estimated BCF of 3 was calculated for chloroacetyl chloride(SRC), using an estimated log Kow of -0.22(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low. Chloroacetyl chloride reacts rapidly with water forming chloroacetic acid and HCl(4). As a result, bioconcentration is not expected to be an important fate process(SRC).

#### **Mobility in soil**

Using a structure estimation method based on molecular connectivity indices(1), the Koc for chloroacetyl chloride can be estimated to be 4(SRC). According to a classification scheme(2), this estimated Koc value suggests that chloroacetyl chloride is expected to have very high mobility in soil. However, chloroacetyl chloride reacts rapidly with water forming chloroacetic acid and HCl(3). As a result, adsorption to soil and leaching are not expected to be important fate processes(SRC).

#### **Other adverse effects**

no data available

### **SECTION 13: Disposal considerations**

#### **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.

## SECTION 14: Transport information

### UN Number

ADR/RID: UN1752 (For reference only, please check.)

IMDG: UN1752 (For reference only, please check.)

IATA: UN1752 (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: CHLOROACETYL CHLORIDE (For reference only, please check.)

IMDG: CHLOROACETYL CHLORIDE (For reference only, please check.)

IATA: CHLOROACETYL CHLORIDE (For reference only, please check.)

### Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)

IMDG: 6.1 (For reference only, please check.)

IATA: 6.1 (For reference only, please check.)

### Packing group, if applicable

ADR/RID: I (For reference only, please check.)

IMDG: I (For reference only, please check.)

IATA: I (For reference only, please check.)

### Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

### Special precautions for user

no data available

### Transport in bulk according to IMO instruments

no data available

### **SECTION 15: Regulatory information**

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

**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**

Listed.

**New Zealand Inventory of Chemicals (NZIoC)**

Listed.

**(PICCS)**

Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC)**

Listed.

**Korea Existing Chemicals List (KECL)**

Listed.

### **SECTION 16: Other information**

### **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](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/>

### **Other Information**

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Do NOT take working clothes home.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any