

## 1 Identification

### Product identifier

**Product name:** Chloroacetyl chloride

**Stock number:** A15846

**CAS Number:**

79-04-9

**EC number:**

201-171-6

**Index number:**

607-080-00-1

**Relevant identified uses of the substance or mixture and uses advised against.** No further relevant information available.

**Identified use:** SU24 Scientific research and development

### Details of the supplier of the safety data sheet

#### Manufacturer/Supplier:

Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757  
Email: tech@alfa.com  
www.alfa.com

**Information Department:** Health, Safety and Environmental Department

#### Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

### Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H311 Toxic in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

STOT RE 1 H372 Causes damage to the lung, the respiratory system and the olfactory system through prolonged or repeated exposure. Route of exposure: Inhalation.



GHS05 Corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

**Hazards not otherwise classified** No information known.

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

### Hazard pictograms



GHS05 GHS06 GHS08

### Signal word

**Danger**

### Hazard statements

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

H372 Causes damage to the lung, the respiratory system and the olfactory system through prolonged or repeated exposure. Route of exposure: Inhalation.

### Precautionary statements

P260 Do not breathe dusts or mists.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects

E - Corrosive material

F - Dangerously reactive material



### Classification system

#### HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 4 Health (acute effects) = 4

FIRE 1 Flammability = 1

REACTIVITY 2 Physical Hazard = 2

### Other hazards

#### Results of PBT and vPvB assessment

PBT: Not applicable.

**Product name:** Chloroacetyl chloride

**vPvB:** Not applicable. (Contd. of page 1)

**3 Composition/information on ingredients**  
**Chemical characterization: Substances**  
**CAS# Description:**  
79-04-9 Chloroacetyl chloride  
**Concentration:** ≤100%  
**Identification number(s):**  
**EC number:** 201-171-6  
**Index number:** 607-080-00-1

**4 First-aid measures**  
**Description of first aid measures**  
**General information**  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.  
**After inhalation**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm.  
Seek immediate medical advice.  
**After skin contact**  
Immediately wash with water and soap and rinse thoroughly.  
Seek immediate medical advice.  
**After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.  
**After swallowing** Do not induce vomiting; immediately call for medical help.  
**Information for doctor**  
**Most important symptoms and effects, both acute and delayed**  
Causes severe skin burns.  
Toxic in contact with skin.  
Toxic if inhaled.  
Toxic if swallowed.  
Causes damage to the lung, the respiratory system and the olfactory system through prolonged or repeated exposure. Route of exposure: Inhalation.  
**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**5 Fire-fighting measures**  
**Extinguishing media**  
**Suitable extinguishing agents** In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.  
**For safety reasons unsuitable extinguishing agents** Water  
**Special hazards arising from the substance or mixture**  
Reacts violently with water  
If this product is involved in a fire, the following can be released:  
Carbon monoxide and carbon dioxide  
Hydrogen chloride (HCl)  
**Advice for firefighters**  
**Protective equipment:**  
Wear self-contained respirator.  
Wear fully protective impervious suit.

**6 Accidental release measures**  
**Personal precautions, protective equipment and emergency procedures**  
Mount respiratory protective device.  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
**Environmental precautions:** Do not allow material to be released to the environment without proper governmental permits.  
**Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralizing agent.  
Dispose of contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents  
**Prevention of secondary hazards:** No special measures required.  
**Reference to other sections**  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.  
**Protective Action Criteria for Chemicals**  
**PAC-1:** 0.040 ppm  
**PAC-2:** 1.6 ppm  
**PAC-3:** 52 ppm

**7 Handling and storage**  
**Handling**  
**Precautions for safe handling**  
Handle under dry protective gas.  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation at the workplace.  
Open and handle container with care.  
**Information about protection against explosions and fires:** No information known.  
**Conditions for safe storage, including any incompatibilities**  
**Storage**  
**Requirements to be met by storerooms and receptacles:** No special requirements.  
**Information about storage in one common storage facility:**  
Store away from water/moisture.  
Store away from strong bases.  
Store away from oxidizing agents.  
Store away from alcohols.  
**Further information about storage conditions:**  
Store under dry inert gas.

**Product name:** Chloroacetyl chloride

This product is moisture sensitive.  
Protect from humidity and water.  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
**Specific end use(s)** No further relevant information available.

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**8 Exposure controls/personal protection**

**Additional information about design of technical systems:**  
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Control parameters**

**Components with limit values that require monitoring at the workplace:**

**79-04-9 Chloroacetyl chloride (100.0%)**

REL (USA)	Long-term value: 0.2 mg/m³, 0.05 ppm
TLV (USA)	Short-term value: 0.69 mg/m³, 0.15 ppm
	Long-term value: 0.23 mg/m³, 0.05 ppm
	Skin
EL (Canada)	Short-term value: 0.15 ppm
	Long-term value: 0.05 ppm
	Skin
EV (Canada)	Short-term value: 0.15 ppm
	Long-term value: 0.05 ppm

**Additional information:** No data

**Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use self-contained respiratory protective device in emergency situations.

**Recommended filter device for short term use:**

Use a respirator with multi-purpose combination (US) or type ABEK (EN 14387) as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU).

**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

**Material of gloves** Butyl rubber, BR

**Penetration time of glove material (in minutes)**

Not determined

>30

**Glove thickness:** 0.3 mm

**Eye protection:**

Tightly sealed goggles

Full face protection

Safety glasses with side shields / NIOSH (US) or EN 166(EU)

**Body protection:** Protective work clothing.

**9 Physical and chemical properties**

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**

<b>Form:</b>	Liquid
<b>Odor:</b>	Pungent
<b>Odor threshold:</b>	Not determined.

<b>pH-value:</b>	Not determined.
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**Change in condition**

<b>Melting point/Melting range:</b>	-22 °C (-8 °F)
<b>Boiling point/Boiling range:</b>	105-106 °C (221-223 °F)
<b>Sublimation temperature / start:</b>	Not determined
<b>Flammability (solid, gaseous)</b>	Not determined.
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Auto igniting:</b>	Not determined.

<b>Danger of explosion:</b>	Not determined.
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**Explosion limits:**

<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined
<b>Vapor pressure at 20 °C (68 °F):</b>	25.3 hPa (19 mm Hg)
<b>Density at 20 °C (68 °F):</b>	1.417 g/cm³ (11.825 lbs/gal)
<b>Relative density</b>	Not determined.
<b>Vapor density</b>	Not determined.
<b>Evaporation rate</b>	Not determined.
<b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Reacts violently
<b>Partition coefficient (n-octanol/water):</b>	Not determined.
<b>Viscosity:</b>	
<b>dynamic:</b>	Not determined.
<b>kinematic:</b>	Not determined.
<b>Other information</b>	No further relevant information available.

Product name: **Chloroacetyl chloride**

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**10 Stability and reactivity**

**Reactivity** Reacts violently with water.  
**Chemical stability** Stable under recommended storage conditions.  
**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.  
**Possibility of hazardous reactions**  
Reacts with strong oxidizing agents  
Contact with water releases toxic gases  
Contact with acids releases toxic gases  
Reacts violently with water  
**Conditions to avoid** No further relevant information available.  
**Incompatible materials:**  
Bases  
Oxidizing agents  
Alcohols  
Water/moisture  
**Hazardous decomposition products:**  
Carbon monoxide and carbon dioxide  
Hydrogen chloride (HCl)

**11 Toxicological information**

**Information on toxicological effects**  
**Acute toxicity:**  
Toxic in contact with skin.  
Toxic if inhaled.  
Toxic if swallowed.  
Danger through skin absorption.  
Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.  
**LD/LC50 values that are relevant for classification:**  

Oral	LD50	207 mg/kg (rat)
Dermal	LD50	662 mg/kg (rat)
Inhalative	LC50/1H	660 ppm/1H (rat)

  
**Skin irritation or corrosion:** Causes severe skin burns.  
**Eye irritation or corrosion:** Causes serious eye damage.  
**Sensitization:** No sensitizing effects known.  
**Germ cell mutagenicity:** No effects known.  
**Carcinogenicity:** No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**Reproductive toxicity:** No effects known.  
**Specific target organ system toxicity - repeated exposure:**  
Causes damage to the lung, the respiratory system and the olfactory system through prolonged or repeated exposure. Route of exposure: Inhalation.  
**Specific target organ system toxicity - single exposure:** No effects known.  
**Aspiration hazard:** No effects known.  
**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.  
**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**12 Ecological information**

**Toxicity**  
**Aquatic toxicity:** No further relevant information available.  
**Persistence and degradability** No further relevant information available.  
**Bioaccumulative potential** No further relevant information available.  
**Mobility in soil** No further relevant information available.  
**Ecotoxical effects:**  
**Remark:** Very toxic for aquatic organisms  
**Additional ecological information:**  
**General notes:**  
Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
Avoid transfer into the environment.  
Very toxic for aquatic organisms  
**Results of PBT and vPvB assessment**  
**PBT:** Not applicable.  
**vPvB:** Not applicable.  
**Other adverse effects** No further relevant information available.

**13 Disposal considerations**

**Waste treatment methods**  
**Recommendation** Consult state, local or national regulations to ensure proper disposal.  
**Uncleaned packagings:**  
**Recommendation:** Disposal must be made according to official regulations.





**14 Transport information**

<b>UN-Number</b> <b>DOT, IMDG, IATA</b>	UN1752
<b>UN proper shipping name</b> <b>DOT</b> <b>ADR</b> <b>IMDG, IATA</b>	Chloroacetyl chloride 1752 Chloroacetyl chloride CHLOROACETYL CHLORIDE

(Contd. on page 5)  
USA

Product name: **Chloroacetyl chloride**

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<b>Transport hazard class(es)</b>	
<b>DOT</b>	
	
<b>Class Label ADR</b>	8 Corrosive substances 6.1, 8
	
<b>Class Label IMDG</b>	6.1 (TC1) Toxic substances 6.1+8
	
<b>Class Label IATA</b>	6.1 Toxic substances 6.1/8
	
<b>Class Label</b>	6.1 Toxic substances 6.1 (8)
<b>Packing group DOT, ADR, IMDG, IATA</b>	I
<b>Environmental hazards:</b>	Not applicable.
<b>Special precautions for user</b>	Warning: Toxic substances
<b>Poison inhalation hazard:</b>	Yes
<b>EMS Number:</b>	F-A,S-B
<b>Segregation groups</b>	Acids
<b>Stowage Category</b>	D
<b>Stowage Code</b>	SW2 Clear of living quarters.
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>DOT</b>	
<b>Quantity limitations</b>	On passenger aircraft/rail: Forbidden On cargo aircraft only: Forbidden
<b>Marine Pollutant (DOT):</b>	No
<b>Remarks:</b>	This material is poisonous by inhalation in Hazard Zone B.
<b>IMDG</b>	
<b>Limited quantities (LQ)</b>	0
<b>Excepted quantities (EQ)</b>	Code: E0 Not permitted as Excepted Quantity
<b>UN "Model Regulation":</b>	UN 1752 CHLOROACETYL CHLORIDE, 6.1 (8), I

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)  
**Hazard pictograms**



GHS05 GHS06 GHS08

**Signal word** Danger

**Hazard statements**

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

H372 Causes damage to the lung, the respiratory system and the olfactory system through prolonged or repeated exposure. Route of exposure: Inhalation.

**Precautionary statements**

P260 Do not breathe dusts or mists.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

**SARA Section 313 (specific toxic chemical listings)** Substance is not listed.

**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer** Substance is not listed.

**Prop 65 - Developmental toxicity** Substance is not listed.

**Prop 65 - Developmental toxicity, female** Substance is not listed.

**Prop 65 - Developmental toxicity, male** Substance is not listed.

**Information about limitation of use:** For use only by technically qualified individuals.

**Other regulations, limitations and prohibitive regulations**

**REACH - Pre-registered substances** Substance is listed

(Contd. on page 6)  
USA

(Contd. of page 5)

Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department

**Date of preparation/Revision:** Print date, revision date and version number are in the header of each page.

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

*IATA: International Air Transport Association*

**EINECS: European Inventory of Existing Commercial Chemical Substances**

CAS: Chemical Abstracts Service (division of the American

HMIS: Hazardous Materials Identification System (USA)

**WHMIS: Workplace Hazardous Materials**

LC50: Lethal concentration, 50

*LD50: Lethal dose, 50 percent*

**PBT: Persistent, Bioaccumulative and Toxic**

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygiene

OSHA: Occupational Safety and Health A

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (U.S. Environmental Protection Agency)

Acute Tox. 3: Acute toxicity – Category 3

Skin Corr. 1A: Skin corrosion/irritation = 0

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1