

## 1 Identification

### Product identifier

**Product name:** Chloroacetone

**Stock number:** A11922, L05799

**CAS Number:**

78-95-5

**EC number:**

201-161-1

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

**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)



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 2 H310 Fatal in contact with skin.

Acute Tox. 2 H330 Fatal if inhaled.



GHS05 Corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.

**Hazards not otherwise classified** Lachrymator

### Label elements

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

#### Hazard pictograms



GHS02 GHS05 GHS06

### Signal word

**Danger**

#### Hazard statements

H226 Flammable liquid and vapour.

H301 Toxic if swallowed.

H310+H330 Fatal in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

#### Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P273 Avoid release to the environment.

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

P309 IF exposed or if you feel unwell:

P310 Immediately call a POISON CENTER/doctor/...

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

### WHMIS classification

B3 - Combustible liquid

D1A - Very toxic material causing immediate and serious toxic effects

D2B - Toxic material causing other toxic effects

E - Corrosive material



### Classification system

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

**(Hazardous Materials Identification System)**

**HEALTH** 3 Health (acute effects) = 3

**FIRE** 2 Flammability = 2

**REACTIVITY** 1 Physical Hazard = 1

### Other hazards

#### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Product name: Chloroacetone**

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### 3 Composition/information on ingredients

**Chemical characterization:** Substances

**CAS# Description:**

78-95-5 Chloroacetone

**Identification number(s):**

**EC number:** 201-161-1

**Impurities and stabilizing additives:** Chloroacetone can be stabilized with up to 0.1% H<sub>2</sub>O or 1.0% CaCO<sub>3</sub>

### 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.

Causes serious eye damage.

**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

### 5 Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing agents** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

**Special hazards arising from the substance or mixture**

In certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

Hydrogen chloride (HCl)

Phosgene gas

**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**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

**Environmental precautions:** Do not allow material to be released to the environment without proper governmental permits.

**Methods and material for containment and cleaning up:**

Keep away from ignition sources.

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.

**Prevention of secondary hazards:** Keep away from ignition sources.

**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.

### 7 Handling and storage

**Handling**

**Precautions for safe handling**

Keep container tightly sealed.

Ensure good ventilation at the workplace.

Open and handle container with care.

**Information about protection against explosions and fires:**

During heating or in case of fire poisonous gases are produced.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Keep ignition sources away.

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

**Storage**

**Requirements to be met by storerooms and receptacles:** Refrigerate

**Information about storage in one common storage facility:**

Do not store together with strongly basic or oxidizing materials.

Protect from heat.

**Further information about storage conditions:**

Keep container tightly sealed.

Refrigerate

**Specific end use(s)** No further relevant information available.

### 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.

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

Chloroacetone (CAS# 78-95-5)

ACGIH TLV <sup>ppm</sup> 1-CEILING (skin)

(Contd. on page 3)  
USA

Product name: <b>Chloroacetone</b>					
<div>Denmark TWA1 (skin) Ireland TWA1; 1-STEL (skin) Netherlands TWA1 (skin)</div> <div>Control parameters</div> <div>Components with limit values that require monitoring at the workplace:</div> <div>78-95-5 Chloroacetone (100.0%)</div> <table><tr><td>TLV (USA)</td><td>Ceiling limit value: 3.8 mg/m<sup>3</sup>, 1 ppm Skin</td></tr><tr><td>EL (Canada)</td><td>Short-term value: C 1 ppm Skin</td></tr></table> <div>Additional information: No data</div> <div>Exposure controls</div> <div>Personal protective equipment</div> <div>General protective and hygienic measures</div> <div>The usual precautionary measures for handling chemicals should be followed.</div> <div>Keep away from foodstuffs, beverages and feed.</div> <div>Remove all soiled and contaminated clothing immediately.</div> <div>Wash hands before breaks and at the end of work.</div> <div>Store protective clothing separately.</div> <div>Avoid contact with the eyes and skin.</div> <div>Maintain an ergonomically appropriate working environment.</div> <div>Breathing equipment: Use self-contained respiratory protective device in emergency situations.</div> <div>Protection of hands:</div> <div>Impervious gloves</div> <div>Check protective gloves prior to each use for their proper condition.</div> <div>The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.</div> <div>Penetration time of glove material (in minutes) Not determined</div> <div>Eye protection:</div> <div>Tightly sealed goggles</div> <div>Full face protection</div> <div>Body protection: Protective work clothing.</div>		TLV (USA)	Ceiling limit value: 3.8 mg/m <sup>3</sup> , 1 ppm Skin	EL (Canada)	Short-term value: C 1 ppm Skin
TLV (USA)	Ceiling limit value: 3.8 mg/m <sup>3</sup> , 1 ppm Skin				
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(Contd. of page 2)					
9 Physical and chemical properties					
Information on basic physical and chemical properties					
General Information					
Appearance:					
Form:	Liquid				
Color:	Colorless				
Odor:	Pungent				
Odor threshold:	Not determined.				
pH-value (124 g/l) at 20 °C (68 °F):	4.3				
Change in condition					
Melting point/Melting range:	-45 °C (-49 °F)				
Boiling point/Boiling range:	118-120 °C (244-248 °F)				
Sublimation temperature / start:	Not determined				
Flash point:	40 °C (104 °F)				
Flammability (solid, gaseous)	Not applicable.				
Ignition temperature:	610 °C (1130 °F)				
Decomposition temperature:	Not determined				
Auto igniting:	Not determined.				
Danger of explosion:	Risk of explosive polymerization upon loss of stabilizer from long periods of time at ambient temperature.				
Explosion limits:					
Lower:	3.4 Vol %				
Upper:	Not determined				
Vapor pressure at 20 °C (68 °F):	16 hPa (12 mm Hg)				
Density at 20 °C (68 °F):	1.161 g/cm <sup>3</sup> (9.689 lbs/gal)				
Relative density	Not determined.				
Vapor density	Not determined.				
Evaporation rate	Not determined.				
Solubility in / Miscibility with					
Water at 20 °C (68 °F):	124 g/l				
Alcohols:	Fully miscible				
Organic solvents:	Soluble in ether. Soluble in chloroform.				
Partition coefficient (n-octanol/water):	Not determined.				
Viscosity:					
dynamic at 20 °C (68 °F):	1.11 mPas				
kinematic:	Not determined.				
Other information	No further relevant information available.				
Additional information	Turns dark and resin-like upon long exposure to light.				
10 Stability and reactivity					
Reactivity No information known.					
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 Spontaneous polymerization can be caused in unstabilized product e.g. by ambient heat					
Conditions to avoid No further relevant information available.					
Incompatible materials:					
Oxidizing agents					
Bases					
Heat					
Hazardous decomposition products:					
Carbon monoxide and carbon dioxide					
Hydrogen chloride (HCl)					
Phosgene					
Additional information: Chloroacetone is used in tear gas, insecticides, color photography, enzyme inactivation, perfumes, and polymerization of vinyl monomers.					

Product name: **Chloroacetone**

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11 Toxicological information

Information on toxicological effects

Acute toxicity:

Fatal if inhaled.  
Fatal in contact with skin.  
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.

LD/LC50 values that are relevant for classification:

Oral	LD50	100 mg/kg (rat)
Dermal	LD50	141 mg/kg (rabbit)
Inhalative	LC50/4H	262 mg/m3/4H (rat)

Skin irritation or corrosion: Causes severe skin burns.

Eye irritation or corrosion:

This product is a lachrymator.  
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: No effects known.

Specific target organ system toxicity - single exposure: No effects known.

Aspiration hazard: No effects known.

Subacute to chronic toxicity: No effects known.

Subacute to chronic toxicity:

Chloroacetone is used in tear gas as a strong irritant to the eyes, skin, and lungs. It is also toxic by ingestion, inhalation, or skin contact, causing somnolence, hair, and ataxia. Chronic exposure may cause weight loss, gastritis, and changes to the salivary glands. Injection causes altered sleep time, tremors, and convulsions.

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.

Ecotoxicological effects:

Remark: Very toxic for aquatic organisms

Additional ecological information:

General notes:

Do not allow product to reach ground water, water course or sewage system.  
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.  
May cause long lasting harmful effects to aquatic life.  
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

UN-Number  
DOT, IMDG, IATA

UN1695

UN proper shipping name  
DOT  
IMDG  
IATA

Chloroacetone, stabilized  
CHLOROACETONE, STABILIZED, MARINE POLLUTANT  
CHLOROACETONE, STABILIZED

Transport hazard class(es)  
DOT



Class

Label

Class

Label

IMDG



Class

Label

6.1 Toxic substances.  
6.1+3+8  
6.1 (TFC) Toxic substances  
6.1+3+8

6.1 Toxic substances.  
6.1+3+8

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USA

**Product name: Chloroacetone**

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**IATA**



**Class** 6.1 Toxic substances.  
**Label** 6.1+3+8

**Packing group** I  
**DOT, IMDG, IATA**

**Environmental hazards:** Environmentally hazardous substance, liquid; Marine Pollutant  
**Marine pollutant (IMDG):** Yes (P)  
Symbol (fish and tree)

**Special precautions for user** Warning: Toxic substances  
**Poison inhalation hazard:** Yes

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

**Transport/Additional information:**

**DOT** Yes (P)  
**Marine Pollutant (DOT):** This material is poisonous by inhalation in Hazard Zone B.  
**Remarks:** Special marking with the symbol (fish and tree).

**UN "Model Regulation":** UN1695, Chloroacetone, stabilized, 6.1 (3+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**



GHS02 GHS05 GHS06

**Signal word** Danger

**Hazard statements**

H226 Flammable liquid and vapour.  
H301 Toxic if swallowed.  
H310+H330 Fatal in contact with skin or if inhaled.  
H314 Causes severe skin burns and eye damage.

**Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P273 Avoid release to the environment.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P309 IF exposed or if you feel unwell:  
P310 Immediately call a POISON CENTER/doctor/...  
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**

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

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.

## 16 Other information

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 Material 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 / last revision** 11/23/2015 / -

**Abbreviations and acronyms:**

RID: Règlement International concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

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

P: Marine Pollutant

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)