

# SAFETY DATA SHEETS

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

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## 1. Identification

### 1.1 GHS Product identifier

Product name            Methyl chloroacetate

### 1.2 Other means of identification

Product number        -

Other names            Acetic acid, chloro-, methyl ester

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

Identified uses        For industry use only. Intermediates

Uses advised against   no data available

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## 2. Hazard identification

### 2.1 Classification of the substance or mixture

Flammable liquids, Category 3

Acute toxicity - Oral, Category 3

Skin irritation, Category 2

Serious eye damage, Category 1

Acute toxicity - Inhalation, Category 3

Specific target organ toxicity – single exposure, Category 3

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H226 Flammable liquid and vapour

H301 Toxic if swallowed

H315 Causes skin irritation

H318 Causes serious eye damage

H331 Toxic if inhaled

H335 May cause respiratory irritation

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

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

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

## Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P370+P378 In case of fire: Use ... to extinguish.

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

P321 Specific treatment (see ... on this label).

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P332+P313 If skin irritation occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

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

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

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P311 Call a POISON CENTER/doctor/...

P312 Call a POISON CENTER/doctor/...if you feel unwell.

## Storage

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

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

## Disposal

P501 Dispose of contents/container to ...

## 2.3 Other hazards which do not result in classification

none

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### 3. Composition/information on ingredients

#### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Methyl chloroacetate	Methyl chloroacetate	96-34-4	none	100%

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### 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

Fresh air, rest. Refer for medical attention.

##### In case of skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

##### In case of eye contact

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

##### If swallowed

Rinse mouth. Do NOT induce vomiting. Refer for medical attention .

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

Extremely corrosive to the eyes, skin, nose, throat, and upper respiratory tract. Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. (USCG, 1999)

#### 4.3 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. Administer activated charcoal ... . /Esters and related compounds/

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## 5. Fire-fighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Excerpt from ERG Guide 155 [Substances - Toxic and/or Corrosive (Flammable / Water-Sensitive)]: Note: Most foams will react with the material and release corrosive/toxic gases. CAUTION: For Acetyl chloride (UN1717), use CO<sub>2</sub> or dry chemical only. SMALL FIRE: CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam. LARGE FIRE: Water spray, fog or alcohol-resistant foam. FOR CHLOROSILANES, DO NOT USE WATER; use AFFF alcohol-resistant medium-expansion foam. Move containers from fire area if you can do it without risk. Use water spray or fog; do not use straight streams. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. (ERG, 2016)

### 5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic fumes of hydrogen chloride (USCG, 1999)

### 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

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## 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

Remove all ignition sources. Personal protection: chemical protection suit including self-contained breathing apparatus. Collect leaking and spilled liquid in covered plastic containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Collect leaking liquid in covered plastic containers.

## 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.

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## 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

Fireproof. Separated from food and feedstuffs and incompatible materials. See Chemical Dangers.

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## 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

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## 9. Physical and chemical properties

Physical state	Clear liquid
Colour	Colorless liquid
Odour	Sweet pungent odor
Melting point/ freezing point	-32°C(lit.)
Boiling point or initial boiling point and boiling range	130°C
Flammability	Flammable. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit / flammability limit	LOWER FLAMMABLE LIMIT: 7.5% BY VOLUME; UPPER FLAMMABLE LIMIT: 18.5% BY VOLUME
Flash point	57°C(lit.)

Auto-ignition temperature	465°C (USCG, 1999)
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	2.95X10 <sup>-3</sup> Pa.s @ 241.03 K
Solubility	In water:28 g/L (20 °C)
Partition coefficient n-octanol/water (log value)	0.76 (calculated)
Vapour pressure	10 mm Hg ( 25 °C)
Density and/or relative density	1.238
Relative vapour density	3.8 (vs air)
Particle characteristics	no data available

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## 10. Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

DECOMPOSES WHEN DISSOLVED IN WATER /SRP: GIVING MONOCHLOROACETIC ACID AND METHANOL/

### 10.3 Possibility of hazardous reactions

Flammable when exposed to heat or flame ...The vapour is heavier than air.METHYL CHLOROACETATE is a halogenated ester. Esters react with acids to liberate heat along with alcohols and acids. Strong oxidizing acids may cause a vigorous reaction that is sufficiently exothermic to ignite the reaction products. Heat is also generated by the interaction of esters with caustic solutions. Flammable hydrogen is generated by mixing esters with alkali metals and hydrides.

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

... Can react vigorously with oxidizing materials.



## 10.6 Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /hydrogen chloride/.

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### 11. Toxicological information

#### Acute toxicity

- Oral: LD50 Mouse oral 240 mg/kg
- 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

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## 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

Methyl chloroacetate, present at 30 mg/l, reached 32-75% of its theoretical BOD in 4 weeks using an activated sludge inoculum at www mg/l and the Japanese MITI test(1); it was hydrolyzed to methanol and monochloroacetic acid(1).

### 12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated for methyl chloroacetate(SRC), using an estimated log Kow of 0.63(1,SRC) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low.

### 12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc for methyl chloroacetate can be estimated to be 6(SRC). According to a classification scheme(2), this estimated Koc value suggests that methyl chloroacetate is expected to have very high mobility in soil.

### 12.5 Other adverse effects

no data available

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## 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.

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### 14. Transport information

#### 14.1 UN Number

ADR/RID: UN2295

IMDG: UN2295

IATA: UN2295

#### 14.2 UN Proper Shipping Name

ADR/RID: METHYL CHLOROACETATE

IMDG: METHYL CHLOROACETATE

IATA: METHYL CHLOROACETATE

#### 14.3 Transport hazard class(es)

ADR/RID: 6.1

IMDG: 6.1

IATA: 6.1

#### 14.4 Packing group, if applicable

ADR/RID: II

IMDG: II

IATA: II

#### 14.5 Environmental hazards

ADR/RID: no

IMDG: no

IATA: no

#### 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

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### 15. Regulatory information

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

Chemical name	Common names and	CAS number	EC number
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	synonyms		
Methyl chloroacetate	Methyl chloroacetate	96-34-4	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			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Not 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](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/>

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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 damage resulting from handling or from contact with the above product.