



# MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 08/23/2013

Version 1.1

## SECTION 1. Identification

### Product identifier

Product number	802413
Product name	Methyl chloroacetate for synthesis

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

Identified uses	Chemical for synthesis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   SDS Phone Support: +1-978-715-1335   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## SECTION 2. Hazards identification

### GHS Classification

Flammable liquid, Category 3, H226  
Acute toxicity, Category 3, Inhalation, H331  
Acute toxicity, Category 3, Oral, H301  
Specific target organ systemic toxicity - single exposure, Category 3, H335  
Skin irritation, Category 2, H315  
Serious eye damage, Category 1, H318  
For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

#### Hazard pictograms



#### Signal Word

Danger

#### Hazard Statements

H226 Flammable liquid and vapor.  
H331 Toxic if inhaled.

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H301 Toxic if swallowed.  
H335 May cause respiratory irritation.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.

## *Precautionary Statements*

P280 Wear eye protection.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
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 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

## **OSHA Hazards**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

## **Other hazards**

None known.

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

Formula	$\text{ClCH}_2\text{COOCH}_3$	$\text{C}_3\text{H}_5\text{ClO}_2$ (Hill)
CAS-No.	96-34-4	
Molar mass	108.53 g/mol	

## **Hazardous ingredients**

*Chemical Name (Concentration)*

CAS-No.

*chloroacetic acid methyl ester (>= 90 % - <= 100 % )*  
96-34-4

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## **SECTION 4. First aid measures**

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

*General advice*

First aider needs to protect himself.

*Inhalation*

After inhalation: fresh air. If breathing stops: immediately apply artificial respiration, if necessary oxygen. Immediately call in physician.

*Skin contact*

After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Get medical attention.

*Eye contact*

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

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### *Ingestion*

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

Never give anything by mouth to an unconscious person.

### **Most important symptoms and effects, both acute and delayed**

irritant effects, Cough, Shortness of breath, Unconsciousness, Nausea, Headache, Discomfort  
Risk of serious damage to eyes.

### **Indication of any immediate medical attention and special treatment needed**

No information available.

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## **SECTION 5. Fire-fighting measures**

### **Extinguishing media**

#### *Suitable extinguishing media*

Water, Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

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

Combustible material, Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

Hydrogen chloride gas

### **Advice for firefighters**

#### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### *Further information*

Cool closed containers exposed to fire with water spray. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6. Accidental release measures**

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

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### **Environmental precautions**

Do not empty into drains. Risk of explosion.

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

Cover drains. Collect, bind, and pump off spills.

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Observe possible material restrictions (see sections 7 and 10).  
Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

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**SECTION 7. Handling and storage**

**Precautions for safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.

*Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

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

Keep container tightly closed in a dry and well-ventilated place. Protected from light. Keep away from heat and sources of ignition.

Keep locked up or in an area accessible only to qualified or authorized persons.

Store below +15°C (+59°F).

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**SECTION 8. Exposure controls/personal protection**

**Exposure limit(s)**

Contains no substances with occupational exposure limit values.

**Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Individual protection measures**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

*Hygiene measures*

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance. Do not eat, drink or smoke when using this product. Work under hood. Do not inhale substance/mixture.

*Eye/face protection*

Tightly fitting safety goggles

*Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

*Other protective equipment:*

protective clothing

*Respiratory protection*

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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**SECTION 9. Physical and chemical properties**

Physical state	liquid
Color	colorless
Odor	stinging
Odor Threshold	No information available.
pH	4.6 at 28 g/l 68 °F (20 °C)
Melting point	-33 °C
Boiling point/boiling range	266 - 270 °F (130 - 132 °C) at 1,013 hPa
Flash point	126 °F (52 °C) DIN 51758
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	4.6 %(V)
Upper explosion limit	18.5 %(V)
Vapor pressure	6.9 hPa at 68 °F (20 °C)
Relative vapor density	No information available.
Relative density	1.24 g/cm <sup>3</sup> at 68 °F (20 °C)
Water solubility	51.6 g/l at 68 °F (20 °C) (slow decomposition)
Partition coefficient: n-octanol/water	log Pow: 0.63 (calculated) (Lit.) Bioaccumulation is not expected (log Pow <1).
Autoignition temperature	No information available.
Decomposition temperature	No information available.

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Viscosity, dynamic	1.23 mPa.s at 68 °F (20 °C)
Explosive properties	No information available.
Ignition temperature	869 °F (465 °C)

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## SECTION 10. Stability and reactivity

### Reactivity

Vapor/air-mixtures are explosive at intense warming.

### Chemical stability

sensitive to moisture  
Sensitivity to light  
Sensitive to air.

### Possibility of hazardous reactions

Strong oxidizing agents, Reducing agents, Bases, acids  
Violent reactions possible with:

### Conditions to avoid

Heating.  
A range from approx. 15 Kelvin below the flash point is to be rated as critical.  
Exposure to moisture.

### Incompatible materials

no information available

### Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### Information on toxicological effects

#### *Likely route of exposure*

Inhalation, Eye contact, Skin contact

#### *Acute oral toxicity*

LD50 rat: 107 mg/kg (External MSDS)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

absorption

#### *Acute inhalation toxicity*

LC50 rat: 0.21 - 0.315 mg/l; 4 h (External MSDS)

Symptoms: mucosal irritations, Cough, Shortness of breath, After a latency period:, Inhalation may lead to the formation of oedemas in the respiratory tract.

absorption

Irritating to respiratory system.

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*Acute dermal toxicity*  
LD50 rat: 137 mg/kg  
(IUCLID)

absorption

*Skin irritation*  
rabbit  
Result: Severe irritations  
(IUCLID)

Causes skin irritation.

*Eye irritation*  
rabbit  
Result: Severe irritations  
(IUCLID) Risk of serious damage to eyes.

Causes serious eye damage.

*Sensitization*  
Sensitization test: guinea pig  
Result: positive  
(IUCLID)

*Genotoxicity in vitro*  
Ames test  
Result: negative  
Method: OECD Test Guideline 471

*Specific target organ systemic toxicity - single exposure*  
May cause respiratory irritation.

*Specific target organ systemic toxicity - repeated exposure*  
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*  
Regarding the available data the classification criteria are not fulfilled.

**Carcinogenicity**

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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### Further information

Systemic effects:

Headache, Nausea, Discomfort, Unconsciousness

Damage to:

Liver, Kidney

Further data:

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### Ecotoxicity

*Toxicity to fish*

LC50 Danio rerio (zebra fish): 1.13 mg/l; 96 h (External MSDS)

*Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): 5.5 mg/l; 24 h (IUCLID)

### Persistence and degradability

*Biodegradability*

99 %; 28 d

OECD Test Guideline 301C

Readily biodegradable.

### Bioaccumulative potential

*Partition coefficient: n-octanol/water*

log Pow: 0.63

(calculated)

(Lit.) Bioaccumulation is not expected (log Pow <1).

### Mobility in soil

No information available.

*Additional ecological information*

Discharge into the environment must be avoided.

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## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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## SECTION 14. Transport information

### Land transport (DOT)

UN number	UN 2295
Proper shipping name	METHYL CHLOROACETATE
Class	6.1 (3)
Packing group	I
Environmentally hazardous	--

### Air transport (IATA)



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UN number	UN 2295
Proper shipping name	METHYL CHLOROACETATE
Class	6.1 (3)
Packing group	
Environmentally hazardous	--
Special precautions for user	yes Not permitted for transport

Sea transport (IMDG)

UN number	UN 2295
Proper shipping name	METHYL CHLOROACETATE
Class	6.1 (3)
Packing group	I
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

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SECTION 15. Regulatory information

United States of America

OSHA Hazards

Combustible Liquid  
Highly toxic by inhalation  
Toxic by ingestion  
Highly toxic by skin absorption  
Skin irritant  
Corrosive to eyes  
Respiratory irritant

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Fire Hazard  
Acute Health Hazard

SARA 313

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

**DEA List I**

Not listed

**DEA List II**

Not listed

**US State Regulations**

**Massachusetts Right To Know**

*Ingredients*

chloroacetic acid methyl ester

**Pennsylvania Right To Know**

*Ingredients*

chloroacetic acid methyl ester

**New Jersey Right To Know**

*Ingredients*

chloroacetic acid methyl ester

**California Prop 65 Components**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

**Notification status**

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

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**SECTION 16. Other information**

**Training advice**

Provide adequate information, instruction and training for operators.

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**Full text of H-Statements referred to under sections 2 and 3.**

H226	Flammable liquid and vapor.
H301	Toxic if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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