



# MATERIAL SAFETY DATA SHEET

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

Revision Date 08/22/2013

Version 1.1

## SECTION 1. Identification

### Product identifier

Product number 808610  
Product name 2,2,2-Trichloroethanol for synthesis

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

Identified uses Chemical for synthesis

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

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821,  
United States of America | General Inquiries: +1-978-715-4321 |  
Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)  
+1-703-527-3887 CHEMTREC (International)  
24 Hours/day; 7 Days/week

## SECTION 2. Hazards identification

### GHS Classification

Acute toxicity, Category 4, Oral, H302  
Serious eye damage, Category 1, H318  
Specific target organ systemic toxicity - single exposure, Category 3, H336  
For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

#### Hazard pictograms



Signal Word  
Danger

#### Hazard Statements

H302 Harmful if swallowed.  
H318 Causes serious eye damage.  
H336 May cause drowsiness or dizziness.

#### Precautionary Statements

P280 Wear protective gloves/ eye protection/ face protection.

# MATERIAL SAFETY DATA SHEET

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

Product number 808610  
Product name 2,2,2-Trichloroethanol for synthesis

---

Version 1.1

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P313 Get medical advice/ attention.

## OSHA Hazards

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

## Other hazards

None known.

---

## SECTION 3. Composition/information on ingredients

Formula	CCl <sub>3</sub> CH <sub>2</sub> OH	C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub> O (Hill)
CAS-No.	115-20-8	
Molar mass	149.4 g/mol	

### Hazardous ingredients

*Chemical Name ( Concentration)*

CAS-No.

2,2,2-Trichloroethanol ( >= 90 % - <= 100 % )

115-20-8

---

## SECTION 4. First aid measures

### Description of first-aid measures

#### *Inhalation*

After inhalation: fresh air. Consult doctor if feeling unwell.

#### *Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing.

#### *Eye contact*

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

#### *Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

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

Breathing difficulties, Drowsiness, drowsiness

Risk of serious damage to eyes.

The following applies to aliphatic halogenated hydrocarbons in general: systemic effect: narcosis, cardiovascular disorders. Toxic effect on liver, kidneys.

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

No information available.

---

## SECTION 5. Fire-fighting measures

### Extinguishing media

## MATERIAL SAFETY DATA SHEET

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

Product number 808610  
Product name 2,2,2-Trichloroethanol for synthesis

---

Version 1.1

### *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 on intense heating.

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*

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

---

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

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

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. 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.

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

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

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.

---

## **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.

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

Protected from light. Tightly closed.

Store at +15°C to +25°C (+59°F to +77°F).

---

# MATERIAL SAFETY DATA SHEET

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

Product number 808610  
Product name 2,2,2-Trichloroethanol for synthesis

Version 1.1

---

## 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. 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.

#### *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.

---

## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	ether-like
Odor Threshold	No information available.
pH	5 - 6 at 68 °F ( 20 °C) (saturated solution)
Melting point	17 - 18 °C
Boiling point/boiling range	304 - 307 °F ( 151 - 153 °C) at 1,013 hPa
Flash point	> 230 °F ( > 110 °C)
Evaporation rate	No information available.

## MATERIAL SAFETY DATA SHEET

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

Version 1.1

Product number 808610  
Product name 2,2,2-Trichloroethanol for synthesis

---

Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	1.3 hPa at 68 °F ( 20 °C)
Relative vapor density	No information available.
Relative density	1.56 g/cm <sup>3</sup> at 68 °F ( 20 °C)
Water solubility	83 g/l at 68 °F ( 20 °C)
Partition coefficient: n-octanol/water	log Pow: 1.42 (experimental) (Lit.) Bioaccumulation is not expected (log Pow <1).
Autoignition temperature	No information available.
Decomposition temperature	> 304 °F ( > 151 °C)
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Ignition temperature	304 °F ( 151 °C)

---

### SECTION 10. Stability and reactivity

#### Reactivity

Forms explosive mixtures with air on intense heating.

#### Chemical stability

Sensitivity to light

#### Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents, Strong acids, acid halides, Acid anhydrides, strong reducing agents

A risk of explosion and/or of toxic gas formation exists with the following substances:

Sodium hydroxide solution, alkali hydroxides

#### Conditions to avoid

Strong heating.

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

#### Incompatible materials

# MATERIAL SAFETY DATA SHEET

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

Product number 808610  
Product name 2,2,2-Trichloroethanol for synthesis

Version 1.1

no information available

**Hazardous decomposition products**  
in the event of fire: See section 5.

---

## SECTION 11. Toxicological information

### Information on toxicological effects

#### *Likely route of exposure*

Inhalation, Eye contact, Skin contact

#### *Acute oral toxicity*

LD50 rat: 600 mg/kg (RTECS)

LDLO rat: 500 mg/kg (RTECS)

absorption

#### *Acute inhalation toxicity*

Symptoms: Breathing difficulties, drowsiness, Drowsiness

#### *Eye irritation*

Risk of serious damage to eyes.

Causes serious eye damage.

#### *Genotoxicity in vitro*

Ames test

Result: negative

(Lit.)

#### *Specific target organ systemic toxicity - single exposure*

May cause drowsiness or dizziness.

#### *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

## MATERIAL SAFETY DATA SHEET

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

Product number 808610  
Product name 2,2,2-Trichloroethanol for synthesis

---

Version 1.1

equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

### Further information

#### Other information

The following applies to aliphatic halogenated hydrocarbons in general: systemic effect: narcosis, cardiovascular disorders. Toxic effect on liver, kidneys.

#### Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

---

## SECTION 12. Ecological information

### Ecotoxicity

#### *Toxicity to fish*

LC50 Pimephales promelas (fathead minnow): 173.0 mg/l; 96 h (ECOTOX Database)

#### *Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): 148.1 mg/l; 48 h (ECOTOX Database)

### Persistence and degradability

No information available.

### Bioaccumulative potential

#### *Partition coefficient: n-octanol/water*

log Pow: 1.42

(experimental)

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

### Mobility in soil

No information available.

#### *Additional ecological information*

Discharge into the environment must be avoided.

---

## 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.

---

## SECTION 14. Transport information

### Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

### Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

### Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

# MATERIAL SAFETY DATA SHEET

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

Product number 808610  
Product name 2,2,2-Trichloroethanol for synthesis

Version 1.1

---

## SECTION 15. Regulatory information

### United States of America

#### OSHA Hazards

Harmful if swallowed.

Corrosive to eyes

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

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.

#### 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

Remarks

No components are subject to the Massachusetts Right to Know Act.

#### Pennsylvania Right To Know

*Ingredients*

2,2,2-Trichloroethanol

#### New Jersey Right To Know

*Ingredients*

2,2,2-Trichloroethanol

#### 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.

# MATERIAL SAFETY DATA SHEET

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

Product number 808610  
Product name 2,2,2-Trichloroethanol for synthesis

---

Version 1.1

## Notification status

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

DSL: This product contains one or several components listed in the Canadian NDSL.  
*Ingredients*  
2,2,2-Trichloroethanol

---

## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

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

H302 Harmful if swallowed.  
H318 Causes serious eye damage.  
H336 May cause drowsiness or dizziness.

### 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).

Revision Date 08/22/2013

---

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.

*All rights reserved. Millipore and the "M" Mark are registered trademarks of Merck KGaA, Darmstadt, Germany.*