

Material Safety Data Sheet

Version 4.0

Revision Date 07/25/2010

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Chlorotrifluoroethylene

Product Number : 295167

Brand : Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +18003255832

Fax : +18003255052

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION**Emergency Overview****OSHA Hazards**

Flammable gas, Compressed Gas, Target Organ Effect, Toxic by inhalation., Toxic by ingestion

Target Organs

Liver, Kidney

GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H280

Contains gas under pressure; may explode if heated.

H301 + H331

Toxic if swallowed or if inhaled.

Precautionary statement(s)

P261

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

P301 + P310

IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

P311

Call a POISON CENTER or doctor/ physician.

P410 + P403

Protect from sunlight. Store in a well-ventilated place.

HMIS Classification

Health hazard:

2

Chronic Health Hazard:

*

Flammability:

4

Physical hazards:

3

NFPA Rating

Health hazard:

3

Fire:

4

Reactivity Hazard:

0

Potential Health Effects

Inhalation

Toxic if inhaled. May cause respiratory tract irritation.

Skin

May be harmful if absorbed through skin. May cause skin irritation.

Eyes

May cause eye irritation.

Ingestion

Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : CTFE
Formula : C₂ClF₃
Molecular Weight : 116.47 g/mol

| CAS-No. | EC-No. | Index-No. | Concentration |
|--------------------------------|-----------|-----------|---------------|
| Chlorotrifluoroethylene | | | |
| 79-38-9 | 201-201-8 | - | - |

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Wipe up with absorbent material (e.g. cloth, fleece).

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

Contents under pressure.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

| Components | CAS-No. | Value | Control parameters | Update | Basis |
|-------------------------|---------|-------|--------------------|------------|---|
| Chlorotrifluoroethylene | 79-38-9 | TWA | 5 ppm | 2008-01-01 | USA. Workplace Environmental Exposure Levels (WEEL) |

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Face shield and safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form Liquefied gas

Safety data

pH no data available
Melting point -158 °C (-252 °F) - lit.
Boiling point -28.4 °C (-19.1 °F) - lit.
Flash point no data available
Ignition temperature no data available
Lower explosion limit 8.4 %(V)
Upper explosion limit 38.7 %(V)
Water solubility no data available
Relative vapour density 4.02
 - (Air = 1.0)

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Strong oxidizing agents Strong bases, Strong oxidizing agents, Reacts violently with water.

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas, Hydrogen fluoride

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

LD50 Oral - mouse - 268 mg/kg

LC50 Inhalation - rat - 4 h - 1000 ppm

Remarks: Lungs, Thorax, or Respiration:Other changes. Gastrointestinal:Other changes.

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

| | |
|-------------------|---|
| Inhalation | Toxic if inhaled. May cause respiratory tract irritation. |
| Ingestion | Toxic if swallowed. |
| Skin | May be harmful if absorbed through skin. May cause skin irritation. |
| Eyes | May cause eye irritation. |

Signs and Symptoms of Exposure

Pulmonary edema. Effects may be delayed., Dizziness, Nausea, Vomiting, renal failure, Cardiac arrhythmias, Asphyxia, Symptoms of renal malfunction may be delayed., Liver injury may occur., Kidney injury may occur.

Additional Information

RTECS: KV0525000

12. ECOLOGICAL INFORMATION**Toxicity**

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS**Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN-Number: 1082 Class: 2.3 (2.1)

Proper shipping name: Trifluorochloroethylene, stabilized

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG

UN-Number: 1082 Class: 2.3 (2.1)

EMS-No: F-D, S-U

Proper shipping name: TRIFLUOROCHLOROETHYLENE, STABILIZED

Marine pollutant: No

IATA

UN-Number: 1082 Class: 2.3 (2.1)

Proper shipping name: Trifluorochloroethylene, stabilized

IATA Passenger: Not permitted for transport

IATA Cargo: Not permitted for transport

15. REGULATORY INFORMATION**OSHA Hazards**

Flammable gas, Compressed Gas, Target Organ Effect, Toxic by inhalation., Toxic by ingestion

DSL Status

This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.

Chlorotrifluoroethylene

CAS-No.
79-38-9

SARA 302 Components

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

SARA 313 Components

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 311/312 Hazards

Fire Hazard, Sudden Release of Pressure Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Chlorotrifluoroethylene

CAS-No.
79-38-9

Revision Date
1993-04-24

Pennsylvania Right To Know Components

Chlorotrifluoroethylene

CAS-No.
79-38-9Revision Date
1993-04-24**New Jersey Right To Know Components**

Chlorotrifluoroethylene

CAS-No.
79-38-9Revision Date
1993-04-24**California Prop. 65 Components**

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

16. OTHER INFORMATION**Further information**

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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. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.
