

SIGMA-ALDRICH**Material Safety Data Sheet**Version 3.2
Revision Date 06/18/2009
Print Date 07/22/2010**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Chloral

Product Number : 23090
Brand : Fluka

Company : Sigma-Aldrich
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SAINT LOUIS MO 63103
USA

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Trichloroacetaldehyde

Formula : C_2HCl_3O
Molecular Weight : 147.39 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Trichloroacetaldehyde			
75-87-6	200-911-5	-	-

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

Combustible Liquid, Irritant, Toxic by inhalation., Harmful by ingestion.
Combustible Liquid, Toxic by inhalation., Harmful by ingestion., Irritant

HMIS Classification

Health Hazard: 3
Flammability: 2
Physical hazards: 0

NFPA Rating

Health Hazard: 2
Fire: 2
Reactivity Hazard: 0

Potential Health Effects

Inhalation Toxic if inhaled. Causes respiratory tract irritation.
Skin Causes skin irritation. May be harmful if absorbed through skin. Causes skin

Eyes
Ingestion

irritation.
Causes eye irritation.
Harmful if swallowed.

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

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point 75 °C (167 °F) - closed cup

Ignition temperature no data available

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

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

Methods for cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

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

Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: 2 - 8 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

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 ABEK (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

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form liquid

Safety data

pH	no data available
Melting point	-57.5 °C (-71.5 °F)
Boiling point	94 - 98 °C (201 - 208 °F)
Flash point	75 °C (167 °F) - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	46.6 hPa (35.0 mmHg) at 20 °C (68 °F)
Density	1.51 g/mL at 20 °C (68 °F)
Water solubility	no data available

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Materials to avoid

Strong oxidizing agents

Hazardous decomposition products

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

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 850 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Ataxia.

LD50 Oral - Mammal - 710 mg/kg

LD50 Oral - mouse - 725 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Ataxia.

LD50 Oral - rabbit - 1,400 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Ataxia.

LD50 Oral - guinea pig - 940 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Ataxia.

LC50 Inhalation - rat - 4 h - 440 mg/l

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Ptois. Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea.

LC50 Inhalation - mouse - 2 h - 32,000 mg/l

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Ataxia.

LC50 Inhalation - dog - 4 h - 5,900 mg/l

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Lacrimation. Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia.

LD50 Intraperitoneal - mouse - 600 mg/kg

Irritation and corrosion

Sensitisation

no data available

Chronic exposure

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Trichloroacetaldehyde)

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.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation	Toxic if inhaled. Causes respiratory tract irritation.
Skin	Causes skin irritation. May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish LC50 - *Leuciscus idus melanotus* - 1,720 mg/l - 48 h

Toxicity to daphnia and other aquatic invertebrates. EC50 - *Daphnia magna* (Water flea) - 112 mg/l - 48 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. 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: 2075 Class: 6.1 Packing group: II
Proper shipping name: Chloral, anhydrous, stabilized
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN-Number: 2075 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: CHLORAL, ANHYDROUS, STABILIZED
Marine pollutant: No

IATA

UN-Number: 2075 Class: 6.1 Packing group: II
Proper shipping name: Chloral, anhydrous, stabilized

15. REGULATORY INFORMATION

OSHA Hazards

Combustible Liquid, Irritant, Toxic by inhalation., Harmful by ingestion. Combustible Liquid, Toxic by inhalation., Harmful by ingestion., Irritant

DSL Status

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

Trichloroacetaldehyde

CAS-No.
75-87-6

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, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Trichloroacetaldehyde	75-87-6	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Trichloroacetaldehyde	75-87-6	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Trichloroacetaldehyde	75-87-6	1993-04-24

California Prop. 65 Components

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

16. OTHER INFORMATION**Further information**

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