

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : **Trichloroacetic acid**

Product Number : 91228
Brand : Fluka

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

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Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : TCA

Formula : C₂HCl₃O₂
Molecular Weight : 163.39 g/mol

CAS-No.	EC-No.	Index-No.	Concentration [%]
Trichloroacetic acid			
76-03-9	200-927-2	607-004-00-7	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Delayed target organ effects
Severe eye irritant
Corrosive

Target Organs

Central nervous system

HMIS Classification

Health Hazard: 3

Chronic Health Hazard: *

Flammability: 1

Physical hazards: 0

NFPA Rating

Health Hazard: 3

Fire : 1

Reactivity Hazard: 0

Potential Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	May be harmful if swallowed. Causes burns.

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

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Continue rinsing eyes during transport to hospital. 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

Flammable properties

Flash point 113 °C (235 °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

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. 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. Discharge into the environment must be avoided.

Methods for cleaning up

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Storage

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

hygroscopic

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Trichloroacetic acid	76-03-9	TWA	1 ppm 6.7 mg/m ³	1996-05-18	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004:Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
Remarks	1996 Adoption Refers to Appendix A -- Carcinogens.				
		TWA	1 ppm 7 mg/m ³	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) 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

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 flakes
Colour white

Safety data

pH 1 at 81.7 g/l at 25 °C (77 °F)
Melting point 54 °C (129 °F)
Boiling point 196 °C (385 °F) at 1,013 hPa (760 mmHg)

Flash point	113 °C (235 °F) - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	1 hPa (1 mmHg) at 51 °C (124 °F) 1.6 hPa (1.2 mmHg) at 50 °C (122 °F)
Density	1.620 g/cm ³
Water solubility	81.7 g/l at 20 °C (68 °F) - completely soluble
Partition coefficient: n-octanol/water	log Pow: 1.645
Vapour density	5.64 - (Air = 1.0)

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Exposure to moisture. Heat.

Materials to avoid

Strong oxidizing agents, Strong bases, Amines

Hazardous decomposition products

Trichloroacetic acid decomposes above 200 °C forming HCl, CO and Phosgene.

Hazardous decomposition products formed under fire conditions.

Carbon oxides, Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 3,320 mg/kg

Irritation and corrosion

Eyes - rabbit - Severe eye irritation - 5 s

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.

Potential Health Effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin May be harmful if absorbed through skin. Causes skin burns.

Eyes Causes eye burns.

Ingestion May be harmful if swallowed. Causes burns.

Target Organs Central nervous system,

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability

Ecotoxicity effects

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 2,000 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates. EC50 - Daphnia magna (Water flea) - 1,460 - 2,000 mg/l - 48 h

Further information on ecology

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

no data available

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 1839 Class: 8 Packing group: II
Proper shipping name: Trichloroacetic acid

IMDG

UN-Number: 1839 Class: 8 Packing group: II EMS-No: F-A, S-B
Proper shipping name: TRICHLOROACETIC ACID, SOLID
Marine pollutant: No

IATA

UN-Number: 1839 Class: 8 Packing group: II
Proper shipping name: Trichloroacetic acid

15. REGULATORY INFORMATION

OSHA Hazards

Delayed target organ effects, Severe eye irritant, Corrosive

TSCA Status

On TSCA Inventory

DSL Status

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

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

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Trichloroacetic acid

CAS-No.
76-03-9Revision Date
1989-12-01**Pennsylvania Right To Know Components**

Trichloroacetic acid

CAS-No.
76-03-9Revision Date
1989-12-01**New Jersey Right To Know Components**

Trichloroacetic acid

CAS-No.
76-03-9Revision Date
1989-12-01**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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