

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : **Trifluoroacetic acid**

Product Number : T6508
Brand : Sigma-Aldrich

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C₂HF₃O₂
Molecular Weight : 114.02 g/mol

| CAS-No. | EC-No. | Index-No. | Concentration [%] |
|-----------------------------|-----------|--------------|-------------------|
| Trifluoroacetic acid | | | |
| 76-05-1 | 200-929-3 | 607-091-00-1 | - |

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Delayed target organ effects
Corrosive

Target Organs

Liver

HMIS Classification

Health Hazard: 3
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 1

NFPA Rating

Health Hazard: 3
Fire : 0
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. May cause respiratory tract

Skin
Eyes
Ingestion

irritation.
May be harmful if absorbed through skin. Causes skin burns.
May cause eye irritation. Causes eye burns.
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 not applicable

Ignition temperature no data available

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Discharge into the environment must be avoided. 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 inhalation of vapour or mist.

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.

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

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 | liquid |
| Colour | colourless |
| Odour | pungent |

Safety data

| | |
|--|---|
| pH | 1.0 at 1.00000 g/l at 20.0 °C (68.0 °F) |
| Melting point | -15.4 °C (4.3 °F) |
| Boiling point | 72.0 °C (161.6 °F) |
| Flash point | not applicable |
| Ignition temperature | no data available |
| Lower explosion limit | no data available |
| Upper explosion limit | no data available |
| Vapour pressure | 130.0 hPa (97.5 mmHg) at 20.0 °C (68.0 °F) 142.7 hPa (107.0 mmHg) at 25.0 °C (77.0 °F) |
| Density | 1.48 g/cm ³ |
| Water solubility | soluble |
| Partition coefficient (n-octanol/water) | log Pow: -2.10 |

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Materials to avoid

Strong bases, Metals, Oxidizing agents, Alcohols, Epoxides, Steel (all types and surface treatments), Aluminum, Exothermic in contact with water, Reacts violently with:, Alkali metals

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions.

Carbon oxides, Hydrogen fluoride

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LC50 Inhalation - rat - 10,000 mg/m³

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Conjunctive irritation.

Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea.

Irritation and corrosion

no data available

Sensitization

no data available

Chronic exposure

no data available

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting

Potential Health Effects

Inhalation

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

Skin

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

Eyes

May cause eye irritation. Causes eye burns.

Ingestion

May be harmful if swallowed. Causes burns.

Target Organs

Liver,

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to daphnia and other aquatic invertebrates. EC50 - Daphnia magna (Water flea) - 55.00 mg/l - 24 h

Further information on ecology

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

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

13. DISPOSAL CONSIDERATIONS

Product

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-No.: 2699 Class: 8 Packing group: I
Proper shipping name: Trifluoroacetic acid

IMDG

UN-No.: 2699 Class: 8 Packing group: I EMS-No: F-A, S-B
Proper shipping name: TRIFLUOROACETIC ACID
Marine pollutant: No

IATA

UN-No.: 2699 Class: 8 Packing group: I
Proper shipping name: Trifluoroacetic acid

15. REGULATORY INFORMATION

OSHA Hazards

Delayed target organ effects, 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

No Components Listed

Pennsylvania Right To Know Components

| | CAS-No. | Revision Date |
|----------------------|---------|---------------|
| Trifluoroacetic acid | 76-05-1 | 1989-12-01 |

New Jersey Right To Know Components

| | CAS-No. | Revision Date |
|----------------------|---------|---------------|
| Trifluoroacetic acid | 76-05-1 | 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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