

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product name : Trifluoroacetic acid

Product Number : 302031

Brand : Sigma-Aldrich

Company : Sigma-Aldrich Company Ltd.  
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### 2. HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

According to Regulation (EC) No1272/2008

Skin corrosion (Category 1A)

Chronic aquatic toxicity (Category 3)

Acute toxicity, Inhalation (Category 4)

According to European Directive 67/548/EEC as amended.

Causes severe burns. Harmful by inhalation. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### Label elements

Pictogram



Signal word

Danger

Hazard statement(s)

H314

Causes severe skin burns and eye damage.

H332

Harmful if inhaled.

H412

Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P273

Avoid release to the environment.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310

Immediately call a POISON CENTER or doctor/physician.

Hazard symbol(s)

C

Corrosive

R-phrases(s)

R20

Harmful by inhalation.

R35

Causes severe burns.

R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrase(s)	
S 9	Keep container in a well-ventilated place.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S27	Take off immediately all contaminated clothing.
S28	After contact with skin, wash immediately with plenty of soap and water.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61	Avoid release to the environment. Refer to special instructions/ Safety data sheets.

**Other hazards** - none

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : TFA  
Formula :  $C_2HF_3O_2$   
Molecular Weight : 114.02 g/mol

CAS-No.	EC-No.	Index-No.	Classification	Concentration
<b>Trifluoroacetic acid</b>				
76-05-1	200-929-3	607-091-00-1	Skin Corr. 1A; Aquatic Chronic 3; Acute Tox. 4; H314, H332, H412 C, R20 - R35 - R52/53	-

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 4. FIRST AID MEASURES

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### 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

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 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**

Do not let product enter drains. Discharge into the environment must be avoided.

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

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

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**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid inhalation of vapour or mist.

**Conditions for safe storage**

Store in cool place. 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.

hygroscopic Store under inert gas.

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**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**

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Handle with gloves.

**Eye protection**

Tightly fitting safety goggles. Faceshield (8-inch minimum).

**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.

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**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
Melting point	-15.4 °C
Boiling point	72.4 °C

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 at 20.0 °C 142.7 hPa at 25.0 °C
Density	1.535 g/mL at 25 °C
Water solubility	soluble
Partition coefficient: n-octanol/water	log Pow: -2.10

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Conditions to avoid

no data available

### 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

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## 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.

### 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.

### Reproductive toxicity

no data available

### Specific target organ toxicity - single exposure

no data available

### Specific target organ toxicity - repeated exposure

no data available

### Aspiration hazard

no data available

### Potential health effects

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

### 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

### Additional Information

RTECS: AJ9625000

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## 12. ECOLOGICAL INFORMATION

### Toxicity

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

### 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

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

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## 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.

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## 14. TRANSPORT INFORMATION

### ADR/RID

UN-Number: 2699 Class: 8 Packing group: I  
Proper shipping name: TRIFLUOROACETIC ACID

### IMDG

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

### IATA

UN-Number: 2699 Class: 8 Packing group: I  
Proper shipping name: Trifluoroacetic acid

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## 15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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## 16. OTHER INFORMATION

Sigma-Aldrich - 302031

**Text of H-code(s) and R-phrases mentioned in Section 3**

Acute Tox.	Acute toxicity
Aquatic Chronic	Chronic aquatic toxicity
H314	Causes severe skin burns and eye damage.
H332	Harmful if inhaled.
H412	Harmful to aquatic life with long lasting effects.
Skin Corr.	Skin corrosion
C	Corrosive
R20	Harmful by inhalation.
R35	Causes severe burns.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Further information**

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