

**Safety data sheet**  
 according to 1907/2006/EC, Article 31

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **1.1 Product identifier**
- **Trade name:** trifluoroacetic acid
- **Article number:** 363317
- **CAS Number:**  
76-05-1
- **EC number:**  
200-929-3
- **Index number:**  
607-091-00-1
- **Registration number** 01-2119548396-29-XXXX
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture**  
Biochemistry  
Laboratory chemical
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
AppliChem GmbH  
Ottoweg 4  
D-64291 Darmstadt
- Tel.: +49 (0)6151 93570  
Fax.: +49 (0)6151 935711  
msds@applichem.com
- **Further information obtainable from:** Dept. Compliance
- **1.4 Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
 Acute Tox. 4      H332 Harmful if inhaled.  
 Skin Corr. 1A      H314 Causes severe skin burns and eye damage.  
 Aquatic Chronic 3      H412 Harmful to aquatic life with long lasting effects.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS05 GHS07

- **Signal word** Danger
- **Hazard statements**  
 H332 Harmful if inhaled.  
 H314 Causes severe skin burns and eye damage.  
 H412 Harmful to aquatic life with long lasting effects.

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• **Precautionary statements**

- P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
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/doctor.  
P321 Specific treatment (see on this label).  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **2.3 Other hazards**

• **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.  
• **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

• **3.1 Chemical characterisation: Substances**

- **CAS No. Description**  
76-05-1 trifluoroacetic acid  
• **Identification number(s)**  
• **EC number:** 200-929-3  
• **Index number:** 607-091-00-1

### SECTION 4: First aid measures

• **4.1 Description of first aid measures**

• **General information:**

Immediately remove any clothing soiled by the product.  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.  
Involve doctor immediately.

• **After inhalation:** Supply fresh air or oxygen; call for doctor.

• **After skin contact:**

Wash off with plenty of water.  
Dab with polyethylene glycol 400.  
Immediately remove any clothing soiled by the product.  
Seek immediate medical advice.

• **After eye contact:**

Rinse opened eye for several minutes under running water. Then consult a doctor.  
Call a doctor immediately.

• **After swallowing:**

make victim drink water (maximum of 2 drinking glasses)  
Do not induce vomiting; call for medical help immediately.  
Do not attempt to neutralize.

• **4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

• **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### SECTION 5: Firefighting measures

• **5.1 Extinguishing media**

• **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

• **5.2 Special hazards arising from the substance or mixture**

In case of fire, the following can be released:

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Hydrogen fluoride (HF)  
carbon oxides (CO, CO<sub>2</sub>).  
Non-combustible.

• **5.3 Advice for firefighters**

• **Protective equipment:**

Mouth respiratory protective device.  
Wear self-contained respiratory protective device.

• **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.  
Contain escaping vapours with water.

## SECTION 6: Accidental release measures

• **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.  
Avoid substance contact.

• **6.2 Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.

• **6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralising agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.  
Clean up affected area.

• **6.4 Reference to other sections**

See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## SECTION 7: Handling and storage

• **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.

• **Information about fire - and explosion protection:** The product is not flammable.

• **7.2 Conditions for safe storage, including any incompatibilities**

• **Storage:**

• **Requirements to be met by storerooms and receptacles:**

Provide acid-resistant floor.  
Prevent any seepage into the ground.

• **Information about storage in one common storage facility:** Not required.

• **Further information about storage conditions:**

Keep container tightly sealed.  
Open receptacle only under localised extractor facilities.  
Store receptacle in a well ventilated area.  
Store under lock and key and with access restricted to technical experts or their assistants only.

• **Recommended storage temperature:** +15 - +25°C

• **Storage class:** 8 B

• **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

• **Additional information about design of technical facilities:** No further data; see item 7.

• **8.1 Control parameters**

• **Ingredients with limit values that require monitoring at the workplace:** Not required.

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- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.
- **Respiratory protection:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.  
Combination filter B-P3
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact gloves made of the following materials are suitable:**  
Butyl rubber, BR  
Recommended thickness of the material:  $\geq 0.7$  mm  
Value for the permeation: Level  $\geq 480$  min
- **As protection from splashes gloves made of the following materials are suitable:**  
Recommended thickness of the material:  $\geq 0.6$  mm  
Natural rubber, NR  
Value for the permeation: Level  $\geq 30$  min
- **Eye protection:**



Tightly sealed goggles

- **Body protection:**  
Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

## SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Liquid
Colour:	Colourless
Odour:	Pungent
Odour threshold:	Not determined.
- **pH-value:** <1

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- |   |   |
|---|---|
| · <b>Change in condition</b><br>Melting point/freezing point:<br>Initial boiling point and boiling range:       | -15 °C<br>72 °C   |
| · <b>Flash point:</b>   | Not applicable.   |
| · <b>Flammability (solid, gas):</b>   | Not applicable.   |
| · <b>Decomposition temperature:</b>   | Not determined.   |
| · <b>Auto-ignition temperature:</b>   | Not determined.   |
| · <b>Explosive properties:</b>  | Product does not present an explosion hazard.                                   |
| · <b>Explosion limits:</b><br>Lower:<br>Upper:  | Not determined.<br>Not determined.  |
| · <b>Vapour pressure at 20 °C:</b>  | 141 hPa   |
| · <b>Density at 20 °C:</b><br>· <b>Relative density</b><br>· <b>Vapour density</b><br>· <b>Evaporation rate</b> | 1.48 g/cm <sup>3</sup><br>Not determined.<br>Not determined.<br>Not determined. |
| · <b>Solubility in / Miscibility with water:</b>  | Fully miscible.   |
| · <b>Partition coefficient: n-octanol/water:</b>  | Not determined.   |
| · <b>Viscosity:</b><br>Dynamic at 20 °C:<br>Kinematic:  | 0.91 mPas<br>Not determined.  |
| · <b>9.2 Other information</b>  | No further relevant information available.                                      |

## SECTION 10: Stability and reactivity

- **10.1 Reactivity** No dangerous reactions known.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
Strong heating  
Moisture
- **10.3 Possibility of hazardous reactions**  
Exothermic reactions with:  
alkalis  
Generates dangerous gases or fumes in contact with:  
acids
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No dangerous reactions known.
- **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5

## SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**  
Harmful if inhaled.
- **Primary irritant effect:**
- **Skin corrosion/irritation**  
Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**  
Causes severe skin burns and eye damage.

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- **After inhalation:** Strong caustic effect on skin and mucous membranes.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**  
Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Must not reach sewage water or drainage ditch undiluted or unneutralised.  
Danger to drinking water if even small quantities leak into the ground.  
Harmful to aquatic organisms  
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values.  
A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

## SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Chemicals must be disposed of in compliance with the respective national regulations.  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:**  
Disposal must be made according to official regulations.  
Packagings that may not be cleansed are to be disposed of in the same manner as the product.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

## SECTION 14: Transport information

- |                                       |                      |
|---------------------------------------|----------------------|
| • <b>14.1 UN-Number</b>               |                      |
| • <b>ADR, IMDG, IATA</b>              | UN2699               |
| • <b>14.2 UN proper shipping name</b> |                      |
| • <b>ADR, IMDG, IATA</b>              | TRIFLUOROACETIC ACID |

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· **14.3 Transport hazard class(es)**

· **ADR**



· **Class** 8 (C3) Corrosive substances.  
· **Label** 8

· **IMDG, IATA**



· **Class** 8 Corrosive substances.  
· **Label** 8

· **14.4 Packing group**

· **ADR, IMDG, IATA** I

· **14.5 Environmental hazards:** Not applicable.

· **14.6 Special precautions for user** Warning: Corrosive substances.  
· **Danger code (Kemler):** 88  
· **EMS Number:** 8-05  
· **Segregation groups** Acids  
· **Stowage Category** B  
· **Stowage Code** SW1 Protected from sources of heat.  
SW2 Clear of living quarters.  
· **Handling Code** H2 Keep as cool as reasonably practicable

· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **ADR**  
· **Limited quantities (LQ)** 0  
· **Excepted quantities (EQ)** Code: E0  
Not permitted as Excepted Quantity  
· **Transport category** 1  
· **Tunnel restriction code** E

· **IMDG**  
· **Limited quantities (LQ)** 0  
· **Excepted quantities (EQ)** Code: E0  
Not permitted as Excepted Quantity

· **UN "Model Regulation":** UN 2699 TRIFLUOROACETIC ACID, 8, I

## SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

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- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Dept. Compliance

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

- **\* Data compared to the previous version altered.**

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