

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

Page 1/9

Printing date 14.12.2021

Revision: 14.12.2021

Version number 8.06 (replaces version 8.05)

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

· **1.1 Product identifier**

· **Trade name:** trifluoroacetic acid

· **Article number:** A0697

· **CAS Number:**

76-05-1

· **EC number:**

200-929-3

· **Index number:**

607-091-00-1

· **Application of the substance / the mixture**

Biochemistry

Laboratory chemicals

· **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.

Eye Dam. 1      H318 Causes serious 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

(Contd. on page 2)

GB

**Trade name: trifluoroacetic acid**

(Contd. of page 1)

- **Hazard statements**
  - H332 Harmful if inhaled.
  - H314 Causes severe skin burns and eye damage.
  - H412 Harmful to aquatic life with long lasting effects.
- **Precautionary statements**
  - P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
  - P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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 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:**
  - Immediately rinse with 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.

GB

(Contd. on page 3)

Trade name: trifluoroacetic acid

(Contd. of page 2)

## SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture**  
In case of fire, the following can be released:  
Carbon monoxide and carbon dioxide  
Hydrogen fluoride (HF)  
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.  
Do not inhale steams/aerosols.
- **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:** Room Temperature
- **Storage class:** 8 B

(Contd. on page 4)

Trade name: trifluoroacetic acid

(Contd. of page 3)

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

## SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see item 7.
- **Individual protection measures, such as 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.
- **Recommended filter device for short term use:** Combination filter B-P3
- **Hand protection**



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:**  
Natural rubber, NR  
Recommended thickness of the material:  $\geq 0.6$  mm  
Value for the permeation: Level  $\geq 30$  min
- **Eye/face 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.

GB

(Contd. on page 5)

Trade name: trifluoroacetic acid

(Contd. of page 4)

## SECTION 9: Physical and chemical properties

### · 9.1 Information on basic physical and chemical properties

#### · General Information

· Physical state	Fluid
· Colour:	Colourless
· Odour:	Pungent
· Odour threshold:	Not determined.
· Melting point/freezing point:	-15 °C
· Boiling point or initial boiling point and boiling range	72 °C
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	Not determined.
· Upper:	Not determined.
· Flash point:	Not applicable.
· Auto-ignition temperature:	Not determined.
· Decomposition temperature:	Not determined.
· pH	<1
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic at 20 °C:	0.91 mPas
· Solubility	
· water:	Not determined.
· Partition coefficient n-octanol/water (log value)	-2.10018
· Vapour pressure at 20 °C:	141 hPa
· Density and/or relative density	
· Density at 20 °C:	1.48 g/cm <sup>3</sup>
· Relative density	Not determined.
· Vapour density	Not determined.

### · 9.2 Other information

· Appearance:	
· Form:	Liquid
· Important information on protection of health and environment, and on safety.	
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· VOC (EC)	100 %
· Change in condition	
· Evaporation rate	Not determined.

### · Information with regard to physical hazard classes

· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void

(Contd. on page 6)

Trade name: trifluoroacetic acid

(Contd. of page 5)

- |                           |      |
|---------------------------|------|
| · Organic peroxides       | Void |
| · Corrosive to metals     | Void |
| · Desensitised explosives | Void |

## SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
Heating.  
Moisture
- **10.3 Possibility of hazardous reactions**  
Exothermic reactions with:  
alkalis  
Generation of gases and dangerous vapours:  
acids
- **10.4 Conditions to avoid**  
Heating.  
Moisture
- **10.5 Incompatible materials:** rubber
- **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5

## SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity**  
Harmful if inhaled.
- **LD/LC50 values relevant for classification:**

· Components	Type	Value	Species
Inhalative	LC50/4 h	10 mg/l	(rat)

- **Skin corrosion/irritation**  
Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**  
Causes serious eye damage.
- **After inhalation:** Strong caustic effect on skin and mucous membranes.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **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.
- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

## 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** -2.1 log Pow
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

(Contd. on page 7)

**Trade name: trifluoroacetic acid**



(Contd. of page 6)

- **12.6 Endocrine disrupting properties**  
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**  
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.  
Do not allow product to reach ground water, water course or sewage system.  
Must not reach sewage water or drainage ditch undiluted or unneutralised.  
Harmful to aquatic organisms  
Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water  
Danger to drinking water if even small quantities leak into the ground.

**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.

**SECTION 14: Transport information**

· <b>14.1 UN number or ID number</b> · <b>ADR, IMDG, IATA</b>	UN2699
· <b>14.2 UN proper shipping name</b> · <b>ADR, IMDG, IATA</b>	TRIFLUOROACETIC ACID
· <b>14.3 Transport hazard class(es)</b> · <b>ADR</b>	
	
· <b>Class</b> · <b>Label</b>	8 (C3) Corrosive substances. 8
· <b>IMDG, IATA</b>	
	
· <b>Class</b> · <b>Label</b>	8 Corrosive substances. 8
· <b>14.4 Packing group</b> · <b>ADR, IMDG, IATA</b>	I
· <b>14.5 Environmental hazards:</b>	Not applicable.

(Contd. on page 8)

Trade name: trifluoroacetic acid

(Contd. of page 7)

· <b>14.6 Special precautions for user</b>	Warning: Corrosive substances.
· <b>Hazard identification number (Kemler code):</b>	88
· <b>EMS Number:</b>	8-05
· <b>Segregation groups</b>	Acids
· <b>Stowage Category</b>	B
· <b>Stowage Code</b>	SW1 Protected from sources of heat. SW2 Clear of living quarters.
· <b>Handling Code</b>	H2 Keep as cool as reasonably practicable
· <b>Segregation Code</b>	SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides

· <b>14.7 Maritime transport in bulk according to IMO instruments</b>	Not applicable.
---	-----------------

· **Transport/Additional information:**

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

· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E0 Not permitted as Excepted Quantity

· <b>UN "Model Regulation":</b>	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.
- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**
- **Substances of very high concern (SVHC) according to REACH, Article 57** Substance is not listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has 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 relatif au transport international 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)  
VOC: Volatile Organic Compounds (USA, EU)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
SVHC: Substances of Very High Concern  
vPvB: very Persistent and very Bioaccumulative

(Contd. on page 9)



Trade name: trifluoroacetic acid

(Contd. of page 8)

- Acute Tox. 4: Acute toxicity – Category 4
- Skin Corr. 1A: Skin corrosion/irritation – Category 1A
- Eye Dam. 1: Serious eye damage/eye irritation – Category 1
- Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
- \* **Data compared to the previous version altered.**

## Annex: Exposure scenario

- **Short title of the exposure scenario** Formulation and packing/repacking of substances and mixtures
- **Description of the activities / processes covered in the Exposure Scenario**  
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Fluid
- **Concentration of the substance in the mixture** Raw material.
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure** Use only on hard ground.
- **Other operational conditions affecting worker exposure**  
Avoid contact with eyes.  
Avoid contact with the skin.  
Do not breathe gas/vapour/aerosol.
- **Other operational conditions affecting consumer exposure** No special measures required.
- **Other operational conditions affecting consumer exposure during the use of the product**  
Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures** No special measures required.
- **Technical protective measures**  
Use product only in enclosed systems.  
Ensure that suitable extractors are available on processing machines
- **Personal protective measures**  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the skin.  
Avoid contact with the eyes.  
Tightly sealed goggles  
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.  
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
- **Measures for consumer protection** Ensure adequate labelling.
- **Environmental protection measures**
- **Water**  
Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.  
Do not allow to reach sewage system.
- **Soil** Prevent contamination of soil.
- **Disposal measures** Ensure that waste is collected and contained.
- **Disposal procedures**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.
- **Guidance for downstream users** No further relevant information available.