

Trifluoroacetic acid

Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 01/06/2022 Version: 1.0

Doc No: SDS-974.071/1



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

1.1. Product identifier

Product form : Substance
Product name : Trifluoroacetic acid
EC no : 200-929-3
CAS No : 76-05-1
Type of product : Pure substance
Chemical structure : -
Formula : $C_2HF_3O_2$

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemical

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

ISOLAB Laborgeräte GmbH
Am Dillhof 2 - 63863 Eschau / GERMANY
Tel: + 49 93 74 / 978 55-0
Fax: +49 93 74 / 978 55-29
prodsafe@isolab.de

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Germany	Giftnotruf der Charité CBF, Haus VIII (Wirtschaftgebäude), UG	Hindenburgdamm 30 12203 Berlin	+49 (0) 30 19240	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (inhalation:dust,mist) H332
Category 4
Skin corrosion/irritation, Category 1A H314
Hazardous to the aquatic environment — H412
Chronic Hazard, Category 3
Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Causes severe skin burns and eye damage. Harmful if inhaled. Harmful to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazardous ingredients :

trifluoroacetic acid . . . %

Hazard statements (CLP) :

H314 - Causes severe skin burns and eye damage.
H332 - Harmful if inhaled.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP) :

P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/

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physician.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
trifluoroacetic acid . . . %	(CAS-No.) 76-05-1 (EC-No.) 200-929-3 (EC Index-No.) 607-091-00-1	80 - 100	Acute Tox. 4 (Inhalation), H332 Skin Corr. 1A, H314 Aquatic Chronic 3, H412

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact	: Rinse eyes with water as a precaution. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting. Call a physician immediately. Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact	: Burns.
Symptoms/effects after eye contact	: Serious damage to eyes.
Symptoms/effects after ingestion	: Burns.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

suitable extinguishing media	: Water spray. dry chemical powder, alcohol-resistant foam, carbon dioxide (CO ₂).
Unsuitable extinguishing media	: Strong water jet.

5.2. Special hazards arising from the substance or mixture

Reactivity in case of fire	: At high temperature may liberate dangerous gases.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Eliminate every possible source of ignition. Access forbidden to unauthorised personnel. Use protective clothing. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Notify authorities if product enters sewers or public waters. Use care in walking on spilled material. Do not inhale vapour.
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6.1.1. For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment. Dust formation: dust mask. Wear suitable protective clothing, gloves and eye or face protection.
- Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Do not touch or walk on the spilled product. Evacuate unnecessary personnel. Mark out the contaminated area with signs and prevent access to unauthorized personnel.
- Measures in case of dust release : In case of dust production: protective goggles. Dust mask. In case of vapour formation use adequate respirator.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". Only qualified personnel equipped with suitable protective equipment may intervene. Wear suitable protective clothing, gloves and eye/face protection.
- Emergency procedures : Avoid contact with skin and eyes. Do not touch spilled material. Evacuate unnecessary personnel. Keep away from combustible material. Keep public away from danger area. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Ventilate area. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment. Do not allow to enter drains or water courses. Do not discharge into drains or waterways without neutralizing.

6.3. Methods and material for containment and cleaning up

- For containment : Comply with the safety instructions. Soak up with inert absorbent material (for example sand, sawdust, a universal binder, silica gel). Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
- Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Sweep or shovel spills into appropriate container for disposal. Minimise generation of dust.
- Other information : Dispose of materials or solid residues at an authorized site. Dispose of contaminated materials in accordance with current regulations.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Use adequate ventilation to keep vapour concentrations below applicable standard. Take all necessary technical measures to avoid or minimize the release of the product on the workplace.
- Precautions for safe handling : Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid dust formation. Avoid prolonged and repeated contact with skin. Contaminated work clothing should not be allowed out of the workplace. Do not spray on an open flame or other ignition source. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Keep valves and fittings free from oil and grease. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Take precautionary measures against static discharge.
- Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations. Containers which are opened should be properly resealed and kept upright to prevent leakage. Ensure adequate ventilation, especially in confined areas.
- Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.
- Incompatible materials : Extremely high or low temperatures.
- Heat and ignition sources : Do not smoke. KEEP SUBSTANCE AWAY FROM: ignition sources. heat sources.
- Information on mixed storage : Keep away from food, drink and animal feeding stuffs.
- Storage area : Avoid : Extremely high or low temperatures. Heat and ignition sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

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8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station. Avoid contact with skin, eyes and clothing. Carry out operations in the open/under local exhaust/ventilation or with respiratory protection. Consider the use of a work permit system e.g. for maintenance activities. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. In the event that dust and/or fine particles are generated with this product, it is prudent to minimize prolonged inhalation exposure to these forms not to exceed the occupational exposure limit. Measure concentrations regularly, and at the time of any change occurring in conditions likely to have consequences on workers exposure.

Hand protection:

Protective gloves. EN 374

Eye protection:

Safety glasses. EN 166. Where excessive dust may result, wear goggles

Skin and body protection:

Wear suitable protective clothing. In case of dust production: dustproof clothing. In case of dust production: head/neck protection. Where contact with eyes or skin is likely, wear suitable protection

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection. Dust production: dust mask with filter type P1. Where excessive vapour may result, wear approved mask

Environmental exposure controls:

Avoid release to the environment.

Consumer exposure controls:

Do not eat, drink or smoke during use. Always wash hands after handling the product. Avoid contact with skin and eyes. Avoid contact during pregnancy/while nursing.

Other information:

Always wash hands after handling the product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Colorless to very pale yellow
Odour	: No data available
Odour threshold	: No data available
Molecular mass	: 114.02 g/mol
pH	: 1 (10 g/l, H ₂ O)
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: -15 °C
Freezing point	: No data available
Boiling point	: 72 °C (1013 hPa)
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: 141 hPa (20 °C)
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 1.48 g/cm ³ (20 °C)
Solubility	: 10 g/cm ³ soluble in water
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

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Explosion limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Harmful if inhaled.

ATE dust/mist	1.5 mg/l/4h
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Skin corrosion/irritation : Causes severe skin burns and eye damage.
Serious eye damage/irritation : Serious eye damage, category 1, implicit
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life with long lasting effects.
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations. Waste Management Regulation published in the Official Journal numbered 29314 on April 2, 2015. Regulation on Incineration of Waste Materials published in the Official Journal numbered 27721 on October 6, 2010.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions. Do not remove as household garbage.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Additional information	: Empty containers should be taken for recycling, recovery or waste in accordance with local regulation.

SECTION 14: Transport information

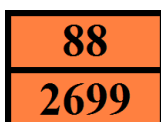
In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
2699	2699	2699	2699	2699
14.2. UN proper shipping name				
TRIFLUOROACETIC ACID	TRIFLUOROACETIC ACID	Trifluoroacetic acid	TRIFLUOROACETIC ACID	TRIFLUOROACETIC ACID
Transport document description				
UN 2699 TRIFLUOROACETIC ACID, 8, I, (E)	UN 2699 TRIFLUOROACETIC ACID, 8, I	UN 2699 Trifluoroacetic acid, 8, I	UN 2699 TRIFLUOROACETIC ACID, 8, I	UN 2699 TRIFLUOROACETIC ACID, 8, I
14.3. Transport hazard class(es)				
8	8	8	8	8
14.4. Packing group				
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

- Overland transport

Classification code (ADR)	: C3
Limited quantities (ADR)	: 0
Excepted quantities (ADR)	: E0
Packing instructions (ADR)	: P001
Mixed packing provisions (ADR)	: MP8, MP17
Portable tank and bulk container instructions (ADR)	: T10
Portable tank and bulk container special provisions (ADR)	: TP2
Tank code (ADR)	: L10BH
Vehicle for tank carriage	: AT
Transport category (ADR)	: 1
Special provisions for carriage - Operation (ADR)	: S20
Hazard identification number (Kemler No.)	: 88
Orange plates	:



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Tunnel restriction code (ADR) : E
EAC code : 2X
APP code : B

- Transport by sea

Packing instructions (IMDG) : P001
Tank instructions (IMDG) : T10
Tank special provisions (IMDG) : TP2
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B
Stowage category (IMDG) : B
Stowage and handling (IMDG) : SW1, SW2, H2
Properties and observations (IMDG) : Colourless, fuming, hygroscopic liquid with a pungent odour. Miscible with water. When heated to decomposition or in contact with acids evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapours are highly irritating to skin, eyes and mucous membranes. Liquid causes severe burns to skin, eyes and mucous membrane

- Air transport

PCA Excepted quantities (IATA) : E0
PCA Limited quantities (IATA) : Forbidden
PCA limited quantity max net quantity (IATA) : Forbidden
PCA packing instructions (IATA) : 850
PCA max net quantity (IATA) : 0.5L
CAO packing instructions (IATA) : 854
CAO max net quantity (IATA) : 2.5L
ERG code (IATA) : 8N

- Inland waterway transport

Classification code (ADN) : C3
Limited quantities (ADN) : 0
Excepted quantities (ADN) : E0
Equipment required (ADN) : PP, EP
Number of blue cones/lights (ADN) : 0

- Rail transport

Classification code (RID) : C3
Limited quantities (RID) : 0
Excepted quantities (RID) : E0
Packing instructions (RID) : P001
Mixed packing provisions (RID) : MP8, MP17
Portable tank and bulk container instructions (RID) : T10
Portable tank and bulk container special provisions (RID) : TP2
Tank codes for RID tanks (RID) : L10BH
Special provisions for RID tanks (RID) : TU38, TE22
Transport category (RID) : 1
Hazard identification number (RID) : 88

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

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15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 2, Significantly hazardous to water (Classification according to AwSV, Annex 1)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative

Data sources : Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013. ECHA (European Chemicals Agency). Supplier's safety documents.

Other information : DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

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Full text of H- and EUH-statements:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
H314	Causes severe skin burns and eye damage.
H332	Harmful if inhaled.
H412	Harmful to aquatic life with long lasting effects.

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.