

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Trifluoromethanesulfonic acid

Revision Date: 9/23/2022

Date Issued: 5/26/2025

Version: 2

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name Trifluoromethanesulfonic acid

Product code KI-0008

CAS 1493-13-6

EC-Number 216-087-5

REACH No. A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Supplier IoLiTec
Ionic Liquids Technologies GmbH
Im Zukunftspark 9
D – 74076 Heilbronn
Germany

Telephone +49 (0)7131-89839-0

Fax +49 (0)7131-89839-109

Email msds@iolitec.de

1.4 Emergency telephone number

Emergency telephone +49 (0)151-41255671

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2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Metal Corrosion (Category 1)

Acute Toxicity, Oral (Category 4)

Skin Corrosion (Category 1B)

Eye Damage (Category 1)

Specific target organ toxicity – Single exposure (Cat. 3)

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)



Pictogram

Signal word

Danger

H-phrases

H290

May be corrosive to metals.

H302

Harmful if swallowed.

H314

Causes severe skin burns and serious eye damage.

H335

May cause respiratory irritation.

P-phrases

P234

Keep only in original container.

P260

Do not breathe fume / gas / mist / vapours / spray.

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| | |
|---------------------------|---|
| P264 | Wash skin thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P301 + P330 + P331 + P310 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water. |
| P304 + P340 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| P305 + P351 + P338 | IF IN EYES: Rinse continuously 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. |
| P363 | Wash contaminated clothing before reuse. |
| P390 | Absorb spillage to prevent material damage. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| P406 | Store in a corrosion resistant container with a resistant inner liner. |

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2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

3 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Trifluoromethanesulfonic acid

CAS: 1493-13-6

EC-Number: 216-087-5

| Ingredient name | Contents | Classification |
|-------------------------------|----------|--|
| Trifluoromethanesulfonic acid | >98% | Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1, STOT SE 3 |

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4 FIRST AID MEASURES

4.1 Description of first aid measures

General

Take off immediately all contaminated clothing and wash it before reuse.

Contaminated work clothing should not be allowed out of the workplace. Immediately call a POISON CENTER or doctor/physician.

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory problems, provide artificial respiration/oxygen.

Ingestion

Rinse mouth. Do NOT induce vomiting. Get medical attention immediately.

Skin

Remove/Take off immediately all contaminated clothing. Rinse skin immediately with soap and water. Get medical attention.

Eyes

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

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5 FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use: Carbon dioxides (CO₂). Dry chemicals, sand, dolomite etc.

Do not use: Water.

5.2. Special hazards arising from the substance or mixture

May react violently with water under formation of substantial heat. Fire causes formation of toxic gases.

5.3. Advice for firefighters

Wear self-contained breathing apparatus as combustion may produce hazardous fumes.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing and avoid inhalation of vapor, skin or eye contact.

6.2 Environmental precautions

Avoid washing into water courses. Avoid contaminating public drains or water supply.

6.3 Methods and materials for containment and cleaning up

Avoid contact with skin or inhalation of spillage, dust or vapor. Collect and reclaim or dispose in sealed containers in license waste. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate.

6.4 Reference to other sections

For disposal see section 13.

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7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Keep away from heat, sparks and open flame. Do not use in confined spaces without adequate ventilation and/or respirator. Avoid contact with water.

7.2 Conditions for safe storage, including any incompatibilities

Store at moderate temperatures in dry, well-ventilated area. Chemical storage. [Keep container tightly closed. Store in a corrosion resistant container with a resistant inner liner. Store locked up.](#)

[Storage class \(TRGS 510\): 6.1D](#)

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure controls

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

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

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Body Protection

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | |
|---------------------------------|------------------------------|
| a) Appearance | liquid |
| b) Color | Colorless to brownish. |
| c) Odor/taste | No characteristic odor. |
| d) Melting point/freezing point | -40 °C |
| e) Initial boiling point | 162 °C |
| f) Flammability | no data available |
| g) Upper/lower explosive limits | no data available |
| h) Flash point | no data available |
| i) Autoignition temperature | no data available |
| j) Decomposition temperature | no data available |
| k) pH | no data available |
| l) Viscosity, kinematic | no data available |
| m) Water solubility | soluble, may react violently |
| n) Partition coefficient | no data available |
| o) Vapor pressure | 10 hPa (55 °C) |
| p) Density | 1.71 g/cm ³ |
| q) Relative vapor density | no data available |

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| | |
|-----------------------------|--------------|
| r) Particle characteristics | not relevant |
| s) Explosive properties | not relevant |
| t) Oxidizing properties | not relevant |

9.2 Other safety information

No data available

10 STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

May react violently with water, alcohols and bases under formation of substantial heat.

10.4 Conditions to avoid

Exposure to moisture.

10.5 Incompatible materials

Water, alcohols, bases

10.6 Hazardous decomposition products

Decomposition may lead to formation of toxic gases: Carbon dioxide (CO₂), carbon monoxide (CO), sulfurous oxides (SO_x), hydrogen fluoride (HF).

11 TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes

Acute toxicity

Acute toxicity, Oral (Cat. 4)

Acute toxicity, Dermal – no data available

Acute toxicity, Inhalation – no data available

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Skin corrosion/irritation

Skin corrosion (Cat. 1B)

Serious eye damage/eye irritation

Eye damage (Cat. 1)

Respiratory or skin sensitization

Respiratory sensitization – no data available

Skin sensitization – not classified

Germ cell mutagenicity

Not classified

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Specific target organ toxicity – single exposure (Cat. 3)

Respiratory irritation

Specific target organ toxicity - repeated exposure

Not classified

Aspiration hazard

No data available

Potential health effects

Inhalation May cause respiratory irritation.

Ingestion Harmful if swallowed.

Skin Causes severe skin burns.

Eyes Causes serious eye damage.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

11.2 Information on other hazards

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Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU)2018/605 at levels of 0.1% or higher.

Additional Information

No additional information available.

12 ECOLOGICAL INFORMATION

12.1 Toxicity

Not classified.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU)2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

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13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Contact specialist disposal companies. Dispose of in accordance with Local Authority requirements. Recover and reclaim or recycle, if practical. [Do not dispose in communal waste water.](#)

14 TRANSPORT INFORMATION

14.1 UN number

UN3265

14.2 UN proper shipping name

CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Trifluoromethanesulfonic acid)

14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA: 8

14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user

No data available

15 REGULATORY INFORMATION

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

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

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15.2 Chemical safety assessment

no data available

Country specific information

Germany

WGK: 3

(Self-Classification)

16 OTHER INFORMATION

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