

ALADDIN SCIENTIFIC CORPORATION
14078 Meridian Parkway, Riverside, CA. 92518

SAFETY DATA SHEET

Version: v1
Revision Date: 2024-01-26
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Trifluoromethanesulfonic acid
Product Number : T398955
Brand : aladdin
CAS-No. : 1493-13-6

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

Identified uses : Laboratory chemicals, Manufacture of substances.

1.3 Company

Company : ALADDIN SCIENTIFIC CORPORATION
Address : 14078 Meridian Parkway,
Riverside, CA. 92518
Telephone : +1 (833) 552-7181
Fax : no data available

1.4 Emergency telephone number

CHEMTREC®, Inside the USA : 1-800-424-9300
CHEMTREC®, Outside the USA :

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Corrosive to Metals (Category 1), H290

Acute toxicity, Oral (Category 4), H302

Skin corrosion (Sub-category 1B), H314

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

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

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

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| | |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Hazard statement(s) | |
| H302 | Harmful if swallowed |
| H314 | Causes severe skin burns and eye damage |
| H335 | May cause respiratory irritation |
| H402 | Harmful to aquatic life |
| Precautionary statement(s) | |
| P261 | Avoid breathing dust/fume/gas/mist/vapors/spray. |
| P264 | Wash hands [and ...] thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P310 | Immediately call a POISON CENTER or doctor/physician. |
| P363 | Wash contaminated clothing before reuse. |
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower]. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing. |
| P405 | Store locked up. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P501 | Dispose of contents/container to an approved waste disposal plant. |
| P301+P312+P330 | IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth. |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Synonyms | : Triflic acid Perfluoromethanesulfonic Acid |
| Triflate;TrifluoroMethanesulfonic Acid; Trifluoromethanesulfonic acid; TfOH; Perfluoromethanesulfonic Acid; trifluoromethanesulfonic acid | |
| Formula | : CHF3O3S |
| Molecular weight | : 150.08 |
| CAS No. | : 1493-13-6 |
| EC-NO. | : 216-087-5 |

| Component | Classification | Concentration |
|-------------------------------|----------------|---------------|
| Trifluoromethanesulfonic acid | | |

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| Component | Classification | Concentration |
|-----------|------------------------------------------------------------------------------|---------------|
| | Met. Corr. 1; Acute Tox. 4; Skin Corr. 1B; STOT SE 3; H290, H302, H314, H335 | ≥99.5% |

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Pulmonary failure possible after aspiration of vomit. Call a physician immediately. Do not attempt to neutralise.

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media

no data available

5.2 Special hazards arising from the substance or mixture

Carbon oxides Sulfur oxides Hydrogen fluoride Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

No metal containers. Tightly closed. Store under inert gas. Storage class (TRGS 510): 8A: Combustible, corrosive hazardous materials

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls

Replace contaminated clothing immediately. Use skin protection lotions. Wash your hands and face after using this substance.

Personal protective equipment

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Eye/face protection

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.

Body Protection

Acid-resistant clothing

Respiratory protection

Recommended Filter type: Filter B-(P3)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|-------------------------------------------------|---------------------|
| a) Appearance | no data available |
| b) Odour | no data available |
| c) Odour Threshold | no data available |
| d) pH | no data available |
| e) Melting point/freezing point | -40°C |
| f) Initial boiling point and boiling range | 162°C |
| g) Flash point | 38°C |
| h) Evaporation rate | no data available |
| i) Flammability (solid, gas) | no data available |
| j) Upper/lower flammability or explosive limits | no data available |
| k) Vapour pressure | no data available |
| l) Vapour density | no data available |
| m) Relative density | 1.696 |
| n) Water solubility | Dissolve with water |
| o) Partition coefficient: n-octanol/water | no data available |
| p) Auto-ignition temperature | no data available |
| q) Decomposition temperature | no data available |
| r) Viscosity | no data available |
| s) Explosive properties N | no data available |
| t) Oxidizing properties N | no data available |

9.2 Other safety information

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no data available

SECTION 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

no data available

10.4 Conditions to avoid

Exposure to moisture. Strong heating.

10.5 Incompatible materials

Metals, Strong oxidizing agents

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male - 1.605,3 mg/kg (OECD Test Guideline 401)

Skin corrosion/irritation

Skin - Rabbit Result: Corrosive (OECD Test Guideline 404)

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitisation

Maximization Test - Guinea pig Result: Did not cause sensitization on laboratory animals. (OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative

Carcinogenicity

no data available

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

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no data available

Aspiration hazard

May cause respiratory irritation.

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - NOAEL (No observed adverse effect level) - 1.000 mg/kg burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish static test LC50 - *Oncorhynchus mykiss* (rainbow trout) - > 100 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates static test EC50 - *Daphnia magna* (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae static test ErC50 - *Pseudokirchneriella subcapitata* - 48 mg/l - 72 h (OECD Test Guideline 201)
static test NOEC - *Pseudokirchneriella subcapitata* - 5,7 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria static test EC50 - activated sludge - > 1.000 mg/l - 3 h (OECD Test Guideline 209)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d Result: 0 % - Not readily biodegradable. (OECD Test Guideline 301D)

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 Other adverse effects

no data available

SECTION 13:

13.1 Disposal considerations

Product

Hand over the remaining and non-recyclable solution to a licensed company.

Contaminated packaging

no data available

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SECTION 14: Transport information

DOT (US)

| | | |
|--------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------|
| UN number: 3265 | Packing group: II | Class: 8 |
| Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (trifluoromethanesulphonic acid) | Reportable Quantity(RQ): no data available | Poison Inhalation Hazard: no data available |
| Environmental Hazards: no | | |

IMDG

| | | |
|--------------------------------------------------------------------------------------------------|-------------------|---------------------------|
| UN number: 3265 | Packing group: II | EMS-No: no data available |
| Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (trifluoromethanesulphonic acid) | | |

IATA

| | | |
|--------------------------------------------------------------------------------------------------|-------------------|----------|
| UN number: 3265 | Packing group: II | Class: 8 |
| Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (trifluoromethanesulphonic acid) | | |

SECTION 15: Regulatory information

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

SECTION 16: Other information

| | |
|-------------------------|------------------------------------------------------------------------------------------------|
| Prepared By | Regulatory Affairs ALADDIN SCIENTIFIC CORPORATION Email: QualityAssurance@aladdinsci.com |
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