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

1.1 Product identifiers

Product name : Bis(trifluoromethane)sulfonimide lithium salt

Product Number : 544094
Brand : Aldrich
Index-No. : 616-124-00-9
CAS-No. : 90076-65-6

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 3), H301
Acute toxicity, Dermal (Category 3), H311
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Specific target organ toxicity - repeated exposure, Oral (Category 2), Nervous system, H373
Short-term (acute) aquatic hazard (Category 3), H402
Long-term (chronic) aquatic hazard (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.
2.2 **GHS Label elements, including precautionary statements**

**Pictogram**

![Pictogram](image)

**Signal Word** Danger

**Hazard statement(s)**
- H301 + H311: Toxic if swallowed or in contact with skin.
- H314: Causes severe skin burns and eye damage.
- H373: May cause damage to organs (Nervous system) through prolonged or repeated exposure if swallowed.
- H412: Harmful to aquatic life with long lasting effects.

**Precautionary statement(s)**
- P260: Do not breathe dust.
- P264: Wash skin thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- 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.
- P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304 + P340 + P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
- P305 + P351 + P338 + P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
- P314: Get medical advice/ attention if you feel unwell.
- P362: Take off contaminated clothing and wash before reuse.
- P405: Store locked up.
- P501: Dispose of contents/ container to an approved waste disposal plant.

2.3 **Hazards not otherwise classified (HNOC) or not covered by GHS** - none

### SECTION 3: Composition/information on ingredients

3.1 **Substances**

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>Bis(trifluoromethylsulfonyl)aminelithium salt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lithium bistri fluoromethanesulfonimidate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Formula</th>
<th>$C_{2}F_{6}LiNO_{3}S_{2}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular weight</td>
<td>287.09 g/mol</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>90076-65-6</td>
</tr>
<tr>
<td>EC-No.</td>
<td>415-300-0</td>
</tr>
<tr>
<td>Index-No.</td>
<td>616-124-00-9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
</table>

Aldrich - 544094
SECTION 4: First aid measures

4.1 Description of first-aid measures

**General advice**
Hydrofluoric (HF) acid burns require immediate and specialized first aid and medical treatment. Symptoms may be delayed up to 24 hours depending on the concentration of HF. After decontamination with water, further damage can occur due to penetration/absorption of the fluoride ion. Treatment should be directed toward binding the fluoride ion as well as the effects of exposure. Skin exposures can be treated with a 2.5% calcium gluconate gel repeated until burning ceases. More serious skin exposures may require subcutaneous calcium gluconate except for digital areas unless the physician is experienced in this technique, due to the potential for tissue injury from increased pressure. Absorption can readily occur through the subungual areas and should be considered when undergoing decontamination. Prevention of absorption of the fluoride ion in cases of ingestion can be obtained by giving milk, chewable calcium carbonate tablets or Milk of Magnesia to conscious victims. Conditions such as hypocalcemia, hypomagnesemia and cardiac arrhythmias should be monitored for, since they can occur after exposure. 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**
First treatment with calcium gluconate paste. 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**
If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. 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**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**
For this substance/mixture no limitations of extinguishing agents are given.

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

- Carbon oxides
- Nitrogen oxides (NOx)
- Sulfur oxides
- Hydrogen fluoride
- Lithium oxides

Not combustible. Ambient fire may liberate hazardous vapours.

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.

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: Avoid generation and inhalation of dusts in all circumstances. 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). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 **Reference to other sections**

For disposal see section 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Work under hood. Do not inhale substance/mixture.

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.
Handle and store under inert gas. Moisture sensitive.

Storage class
Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

Skin protection
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

**Body Protection**
protective clothing

**Respiratory protection**
Recommended Filter type: Filter type 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. required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**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**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance Form</td>
<td>powder</td>
</tr>
<tr>
<td>Color</td>
<td>white</td>
</tr>
<tr>
<td>b) Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>c) Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>7.0 - 9.5 at 10 g/l</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>Melting point/range: 234 - 238 °C (453 - 460 °F) - lit.</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>g) Flash point</td>
<td>( )Not applicable</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>j) Upper/lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>
k) Vapor pressure  
< 0.000001 hPa at 25 °C (77 °F) - Regulation (EC) No. 440/2008, Annex, A.4

l) Vapor density  
No data available

m) Density  
ca.2.15 g/cm³ at 20 °C (68 °F) - OECD Test Guideline 109

n) Relative density  
No data available

o) Water solubility  
ca.1,000 g/l - OECD Test Guideline 105

p) Partition coefficient:  
n-octanol/water  
log Pow: -1.19 - OECD Test Guideline 107 - Bioaccumulation is not expected.

q) Autoignition temperature  

r) Decomposition temperature  
No data available

s) Viscosity  
No data available

t) Explosive properties  
No data available

u) Oxidizing properties  
none

9.2 Other safety information  
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity  
No data available

10.2 Chemical stability  
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions  
Violent reactions possible with:  
Strong oxidizing agents

10.4 Conditions to avoid  
Avoid moisture.  
no information available

10.5 Incompatible materials  
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 - female - 210 mg/kg
  (OECD Test Guideline 401)
- Inhalation: No data available
- LD50 Dermal - Rabbit - male and female - 400 mg/kg
  (OECD Test Guideline 402)

**Skin corrosion/irritation**
- Skin - Rabbit
  Result: Causes burns. - 4 h
  (OECD Test Guideline 404)

**Serious eye damage/eye irritation**
- Eyes - Rabbit
  Result: Irreversible effects on the eye
  (OECD Test Guideline 405)

**Respiratory or skin sensitization**
- Maximization Test - Guinea pig
  Result: Does not cause skin sensitization.
  (OECD Test Guideline 406)

**Germ cell mutagenicity**
- Test Type: Ames test
- Test system: S. typhimurium
- Metabolic activation: with and without metabolic activation
- Method: OECD Test Guideline 471
  Result: negative
- Test Type: Chromosome aberration test in vitro
  Test system: Human lymphocytes
- Metabolic activation: with and without metabolic activation
  Method: OECD Test Guideline 473
  Result: negative
- 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**
- IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
- No data available

**Specific target organ toxicity - single exposure**
Specific target organ toxicity - repeated exposure
Oral - May cause damage to organs through prolonged or repeated exposure.
- Central nervous system, Peripheral nervous system

Aspiration hazard
No data available

11.2 Additional Information
Repeated dose toxicity - Rat - male and female - Oral - 29 d - NOAEL (No observed adverse effect level) - 15 mg/kg

Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea
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
semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 88.4 mg/l - 96 h (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Daphnia magna (Water flea) - 14 mg/l - 48 h (OECD Test Guideline 202)

Toxicity to algae
static test ErC50 - Desmodesmus subspicatus (green algae) - 178 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: 9 % - Not readily biodegradable. (OECD Test Guideline 302B)

12.3 Bioaccumulative potential
Bioaccumulation
Cyprinus carpio (Carp) - 8 Weeks
at 25 °C(lithium bis(trifluoromethylsulfonyl)imide)

Bioconcentration factor (BCF): < 4 (OECD Test Guideline 305)

12.4 Mobility in soil
No data available
12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14: Transport information

DOT (US)
UN number: 2923  Class: 8 (6.1)  Packing group: II
Proper shipping name: Corrosive solids, toxic, n.o.s. (lithium bis(trifluoromethylsulfonyl)imide)
Reportable Quantity (RQ):
    Poison Inhalation Hazard: No

IMDG
UN number: 2923  Class: 8 (6.1)  Packing group: II  EMS-No: F-A, S-B
Proper shipping name: CORROSIVE SOLID, TOXIC, N.O.S. (lithium bis(trifluoromethylsulfonyl)imide)

IATA
UN number: 2923  Class: 8 (6.1)  Packing group: II
Proper shipping name: Corrosive solid, toxic, n.o.s. (lithium bis(trifluoromethylsulfonyl)imide)

SECTION 15: Regulatory information

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

**Massachusetts Right To Know Components**
No components are subject to the Massachusetts Right to Know Act.

**SECTION 16: Other information**

**Further information**
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact misbranding@sial.com.

Version: 6.10 Revision Date: 08/23/2023 Print Date: 01/06/2024