

Matrix Scientific

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SAFETY DATA SHEET

Transportation Emergency: 3E Co. (5025) 800-451-8346

1. Product Identification

| | |
|----------------------------|---|
| Name | Bis(2-methoxyethyl)aminosulfur trifluoride |
| Catalog Number | 006320 |
| CAS Registry Number | [202289-38-1] |
| Company | Matrix Scientific |
| Physical Address | 131 Pontiac Business Center Drive Elgin, SC 29045 USA |
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2. Hazard Identification

Hazardous Ingredients Bis(2-methoxyethyl)aminosulfur trifluoride

Toxic, corrosive, water-reactive liquid. Direct skin or eye contact can cause severe burns. Harmful by inhalation and ingestion. Reacts violently with water, forming hydrogen fluoride. Keep away from moisture.

GHS label elements, including precautionary statements

Signal word

DANGER

Pictogram



Hazard statement(s)

| | |
|------|---|
| H301 | Toxic if swallowed |
| H302 | Harmful if swallowed |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage |

Precautionary statement(s)

| | |
|------|--|
| P202 | Do not handle until all safety precautions have been read and understood. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. |
| No | smoking. |
| P223 | Do not allow contact with water. |
| P260 | Avoid breathing dust/fume/ gas/mist/vapours/spray. |

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.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P404 Store in a closed container.
P411+P235 Store at temperatures not exceeding 8°C . Keep cool.
P501 Dispose of contents/container to ... [...] in accordance with local/regional/national/ international regulation (to be specified)].

3. **Composition, Information or Ingredients**

Bis(2-methoxyethyl)aminosulfur trifluoride

4. **First Aid Measures**

Eye Contact: While holding eyelids open, flush eyes with water until calcium gluconate solution is available. Seek medical treatment immediately. Trained personnel should administer 1% calcium gluconate solution by **continuous** drip.

Skin Contact: Flush with copious amounts of water until treatment is available. Remove contaminated clothing. With gloved hand apply 2.5% calcium gluconate gel to the burn area. An alternative treatment is immersion in an iced solution of 0.2% Hyamine 1622 (benzethonium chloride) or 0.13% Zephiran (benzalkonium chloride). If immersion is impractical, soaked compresses of the same solution should be applied to the area. Immersion or compresses must be used continuously for two hours. Compresses should be changed every two minutes. Burns covering an area greater than eight square inches require immediate treatment by a physician. A physician should be consulted for all exposures.

NOTES TO PHYSICIAN: If pain persists after above topical treatments, it may be necessary to inject 5% aqueous calcium gluconate beneath, around and into the burn area. This will more likely be necessary in the treatment of extensive burns or small burns where treatment has been delayed. The patient should be observed for clinical symptoms of hypocalcemia following ingestion or inhalation or following extensive burns. Serum calcium, potassium and magnesium determinations must be performed immediately and periodically to monitor for hypocalcemia and electrolyte imbalance. EKGs should be done immediately and periodically to monitor for arrhythmias, hypocalcemia and hyperkalemia.

Inhalation: Move exposed personnel to uncontaminated area. Seek prompt medical attention. If not breathing, give artificial respiration. Mouth to mouth resuscitation is not recommended. If breathing is difficult, give oxygen. Continue with administration of oxygen

while waiting for medical attention. If airway obstruction occurs the placement of an artificial airway, by an emergency medical technician, may be necessary. Trained personnel should administer 2.5% calcium gluconate by nebulizer with patient in sitting position.

Ingestion: Do not induce vomiting. Dilute acid by drinking water, several ounces of Milk of Magnesia, milk, Mylanta, or several vials of calcium gluconate. Gastric lavage with lime (calcium oxide) water may be performed by a physician.

5. Fire-Fighting Measures

Extinguishing media: Carbon Dioxide or dry chemical. **Do not use water.**

HAZARDOUS COMBUSTION PRODUCTS: Hydrogen fluoride, sulfur oxides and organic amines.

Special fire fighting

procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual fire and explosion hazards/ decomposition of

product: Combustion products are highly corrosive.

6. Accidental Release Measures

Evacuate the area. Wear self-contained breathing apparatus, splash suit, rubber boots, and heavy rubber gloves. **Do not use water.** Cover spill with dry powdered limestone (calcium carbonate), sand, or soda ash. Place in covered (not sealed) Teflon, Polypropylene or HDPE containers and transport outdoors. Neutralize material prior to disposal (see Section 13. Disposal Considerations). After material pickup is complete, ventilate area and wash spill site with a dilute caustic solution, such as bicarbonate.

7. Handling and Storage

STORAGE: Product must be packaged and stored in a moisture free environment. Product should be isolated from the ambient air by using a dry, inert atmosphere, such as nitrogen or argon. Package container must be Teflon, Polypropylene, or HDPE.

HANDLING: Work in an inert, moisture-free atmosphere, such as a glove box. When using heat baths with this material do not use silicone oil as the heat transfer fluid. Fluorinated oils or high boiling hydrocarbon oil make acceptable heat transfer fluids. This Product reacts violently with silicone oil, which may result in a fire.

This product is provided solely for the purpose of research and development.

8. Exposure Controls and Personal Protection

VENTILATION: Use in a well ventilated area

RESPIRATORY PROTECTION: Wear appropriate respirator when ventilation inadequate.

EMERGENCY USE: Half-face respiration with acid gas cartridge during clean up or Self Contained Breathing Apparatus (SCBA) during emergency situations.

PROTECTIVE GLOVES: Wear chemical resistant gloves and splash suit. Wash equipment after use.

EYE PROTECTION: Wear safety goggles and face shield (8 inch minimum).

9. Physical and Chemical Properties

APPEARANCE, ODOR AND STATE: Yellow to brown liquid at room temperature, which may fume slightly in moist air. Sharp acidic odor associated with the resulting formation of hydrogen fluoride.

Molecular Formula: C₆H₁₄F₃NO₂S

Molecular Weight: 221.24

Boiling point (C): >80°(dec)

Density (g/ml): 1.2

Index of refraction: 1.2

SOLUBILITY: Miscible with hexane, ethers, halogenated organics, toluene, and other common organic solvents. Note: Reacts violently with water.

10. Stability and Reactivity

CHEMICAL STABILITY: Stable at room temperature in the absence of moisture. However, refrigeration to (0_-4_C) is recommended for long-term storage (over months).

CONDITIONS TO AVOID: Avoid contact with moisture. Avoid elevated temperatures. Pure Bis(2-methoxyethyl)aminosulfur trifluoride has been shown to undergo decomposition, which may be rapid, when heated above 100 °C in a confined vessel.

INCOMPATIBILITY (Materials to Avoid): Water, aqueous acids, aqueous bases, silicone oil.

REACTIVITY: Reacts with alcohols, aldehydes, ketones and carboxylic acids. Reacts violently with water to form hydrogen fluoride. Reacts with silicone oil, which may result in a fire.

A) HAZARDOUS DECOMPOSITION PRODUCTS: Toxic gases: hydrogen fluoride, sulfur oxyfluorides and sulfur oxides.

B) HAZARDOUS POLYMERIZATION: Not known to occur.

11. Toxicological Information

The toxicological properties of this product have not been fully investigated.

Single Dose Oral Toxicity in Rats/LD50 in Rats: LD50>50, but <200 mg/Kg of body weight.

DOT Test for Skin Corrosivity: Product is corrosive.

12. Ecological Information

The ecological effects of this product have not been fully investigated.

Other adverse effects: No data available

13. Disposal Considerations

WASTE DISPOSAL METHOD: Do not return unused product or empty container to supplier. To the Bis(2-methoxyethyl)aminosulfur trifluoride reagent or residues of the reagent in containers etc., that are to be disposed of, add acetonitrile to result in an approximately 20% by volume solution of the This product reagent in acetonitrile. Externally cool the solution to about 0_C and then slowly add in small portions a 2 molar equivalent of methanol, with stirring. Neutralize the resulting solution by the addition of aqueous sodium bicarbonate until carbon dioxide evolution ceases and the resulting mixture is neutral or slightly basic. The neutralization reaction is vigorous; proper precautions must be taken. Proper personal protective equipment (i.e., acid suit, rubber gloves, face shield) is required. Neutralization procedure must be done in an area with adequate forced ventilation. Empty containers should be rinsed with acetonitrile prior to disposal. The resulting neutralized product mixture and its' containers should be disposed of in accordance with federal, state, and local regulations.

14. Transport Information

| | |
|-------------------------------|---|
| Shipping Name | Corrosive liquids, water-reactive, n.o.s. |
| Class / Sub-Class | 8 / 4.3 |
| UN Number | UN3094 |
| Packing Group | I |
| Inhalation Hazard Zone | |

15. Regulatory Information

Adhere to all Federal, State and local regulations.

16. Other Information

The information contained herein is accurate to the best of our knowledge, but is not meant to be complete and is included only as a guide. the end user is responsible for any damage resulting from handling or from contact with this product.