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

1.1. Product identifier

Product form: Substance
Physical state: Liquid
Substance name: TRIMETHYLSILYL TRIFLUOROMETHANESULFONATE
Product code: SIT8620.0
Formula: C4H9F3O3SSi
Synonyms: TRIMETHYLSILYLTRIFLATE
Chemical family: ORGANOSILANE

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

Use of the substance/mixture: Chemical intermediate
For research and industrial use only

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)
Flam. Liq. 3 H226
Skin Corr. 1B H314
Eye Dam. 1 H318

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US): 

Signal word (GHS-US): Danger

Hazard statements (GHS-US): H226 - Flammable liquid and vapor
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Precautionary statements (GHS-US): P280 - Wear protective gloves/protective clothing/eye protection/face protection
P264 - Wash hands thoroughly after handling
P310 - Immediately call a doctor
P210 - Keep away from heat, open flames, sparks. - No smoking
P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
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 - 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
P363 - Wash contaminated clothing before reuse
TRIMETHYLSILYL TRIFLUOROMETHANESULFONATE
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P403+P235 - Keep in a cool place
P405 - Store locked up
P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Other hazards
Other hazards not contributing to the classification: Material will generate trifluoromethanesulfonic acid on contact with moisture on skin eyes or mucous membranes.

2.4. Unknown acute toxicity (GHS-US)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substance
Substance type: Mono-constituent
Name: TRIMETHYLSILYL TRIFLUOROMETHANESULFONATE
CAS No: 27607-77-8
EC no: 248-565-4

<table>
<thead>
<tr>
<th>Name</th>
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<th>%</th>
<th>Classification (GHS-US)</th>
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<td>Trimethylsilyl trifluoromethanesulfonate</td>
<td>(CAS No) 27607-77-8</td>
<td>&gt; 97</td>
<td>Flam. Liq. 3, H226</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1, H314</td>
</tr>
</tbody>
</table>

3.2. Mixture
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of soap and water. Get immediate medical advice/attention.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries: Causes severe skin burns and eye damage.
Symptoms/injuries after skin contact: Causes (severe) skin burns.
Symptoms/injuries after eye contact: Causes serious eye damage.
Symptoms/injuries after ingestion: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
Fire hazard: Flammable liquid and vapor. Irritating fumes of trifluoromethanesulfonic acid and organic acid vapors may develop when material is exposed to water or open flame.

5.3. Advice for firefighters
Firefighting instructions: Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures: Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel
Emergency procedures: Evacuate unnecessary personnel.
TRIMETHYLSILYL TRIFLUOROMETHANESULFONATE
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6.1.2. For emergency responders
Protective equipment: Equip cleanup crew with proper protection.

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapor and mist. Take precautionary measures against static discharge. Containers and transfer lines require grounding during use. Provide good ventilation in process area to prevent accumulation of vapors. Use only non-sparking tools.

Hygiene measures: Wash contaminated clothing before reuse. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.
Storage conditions: Keep container tightly closed.
Storage area: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Trimethylsilyl trifluoromethanesulfonate (27607-77-8)
USA ACGIH ACIGH.TWA (ppm) < 3 ppm (Gelest Recommendation)

8.2. Exposure controls
Appropriate engineering controls: Provide local exhaust or general room ventilation.
Personal protective equipment: Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Hand protection: Neoprene or nitrile rubber gloves.
Eye protection: Chemical goggles or face shield. Contact lenses should not be worn.
Skin and body protection: Wear suitable protective clothing.
Respiratory protection: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor/acid gas (yellow cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state: Liquid
Appearance: Clear liquid.
Molecular mass: 222.25 g/mol
Color: Straw.
Odor: Acrid.
Odor threshold: No data available
Refractive index: 1.36
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: No data available
Boiling point: 140 - 141 °C
Flash point: 40 °C
Auto-ignition temperature: 405 °C
Decomposition temperature: No data available
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Flammability (solid, gas): Flammable liquid and vapor
Vapor pressure: 14 mm Hg @ 25°C
Relative vapor density at 20 °C: > 1
Relative density: 1.225
VOC content: 100 %
Solubility: Reacts with water.
Log Pow: No data available
Log Kow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Explosive limits: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity
10.1. Reactivity
No additional information available
10.2. Chemical stability
Stable in sealed containers stored under a dry inert atmosphere.
10.3. Possibility of hazardous reactions
Reacts with water and moisture in air, liberating trifluoromethanesulfonic acid.
10.4. Conditions to avoid
Heat. Open flame. Sparks.
10.5. Incompatible materials
10.6. Hazardous decomposition products

SECTION 11: Toxicological information
11.1. Information on toxicological effects
Acute toxicity: Not classified
Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/irritation: Causes serious eye damage.
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
Specific target organ toxicity (single exposure): Not classified
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard: Not classified
Symptoms/injuries after skin contact: Causes (severe) skin burns.
Symptoms/injuries after eye contact: Causes serious eye damage.
Symptoms/injuries after ingestion: May be harmful if swallowed.

SECTION 12: Ecological information
12.1. Toxicity
No additional information available
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. **Other adverse effects**
- Other adverse effects: This substance may be hazardous to the environment.
- Effect on ozone layer: No known ecological damage caused by this product.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods
- Waste disposal recommendations: May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
- Ecology - waste materials: Avoid release to the environment.

### SECTION 14: Transport information

#### 14.1. UN number
- UN-No.(DOT): 2920
- DOT NA no.: UN2920

#### 14.2. UN proper shipping name
- Proper Shipping Name (DOT): Corrosive liquids, flammable, n.o.s.
- Department of Transportation (DOT) Hazard Classes: 8 - Class 8 - Corrosive material 49 CFR 173.136
- Hazard labels (DOT): 8 - Corrosive
  3 - Flammable liquid

- DOT Symbols: G - Identifies PSN requiring a technical name
- Packing group (DOT): II - Medium Danger
- DOT Packaging Exceptions (49 CFR 173.xxx): None

#### 14.3. Additional information
- Emergency Response Guide (ERG) Number: 29
- Other information: No supplementary information available.

#### Transport by sea
- DOT Vessel Stowage Location: C - The material must be stowed “on deck only” on a cargo vessel and on a passenger vessel.
- DOT Vessel Stowage Other: 25 - Shade from radiant heat, 40 - Stow “clear of living quarters”

#### Air transport
- DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27): 1 L
- DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75): 30 L

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations
- Trimethylsilyl trifluoromethanesulfonate (27607-77-8)
- Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations
TRIMETHYLSILYL TRIFLUOROMETHANESULFONATE
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Trimethylsilyle trifluoromethanesulfonate (27607-77-8)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian NDSL (Non-Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

<table>
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<th>TRIMETHYLSILYL TRIFLUOROMETHANESULFONATE(27607-77-8)</th>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
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<tr>
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<tr>
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</tr>
</tbody>
</table>

SECTION 16: Other information

Abbreviations and acronyms:
- ND: Not Determined
- NA: Not Applicable
- LD: Lethal Dose
- LC: Lethal Concentration
- ATE: Acute Toxicity Estimates
- H: hour
- °: °C unless otherwise stated
- mm: millimeters
- torr: 
- PEL: permissible exposure level
- TWA: time weighted average
- TLV: threshold limit value
- TG: Test Guideline
- NIOSH: National Institute for Occupational Safety and Health
- IARC: International Agency for Research on Cancer
- NTP: National Toxicology Program
- HMIS: Hazardous Material Information System
- CAS No.: Chemical Abstract Service Registration Number
- EC No.: European Commission Registration Number
- EC Index No.: European Commission Index Number
- OECD: The Organisation for Economic Co-operation and Development

Full text of H-phrases:
- Eye Dam. 1: Serious eye damage/eye irritation Category 1
- Flam. Liq. 3: Flammable liquids Category 3
- Skin Corr. 1B: Skin corrosion/irritation Category 1B
- H314: Causes severe skin burns and eye damage
- H318: Causes serious eye damage

HMIS III Rating

- Health: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
- Flammability: 2 Moderate Hazard
- Physical: 1 Slight Hazard

Prepared by safety and environmental affairs.

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SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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