# SAFETY DATA SHEET

**Triethylamine trihydrofluoride**


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

### 1.1. Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>Triethylamine trihydrofluoride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product number</td>
<td>FT02864</td>
</tr>
<tr>
<td>Synonyms; trade names</td>
<td>Hydrogen fluoride triethylamine, TREAT-HF</td>
</tr>
<tr>
<td>CAS number</td>
<td>73602-61-6</td>
</tr>
<tr>
<td>EC number</td>
<td>277-550-5</td>
</tr>
</tbody>
</table>

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

**Identified uses**

Laboratory reagent. Manufacture of substances. Research and development.

### 1.3. Details of the supplier of the safety data sheet

**Supplier**

Carbosynth Ltd  
8&9 Old Station Business Park  
Compton  
Berkshire  
RG20 6NE  
UK  
+44 1635 578444  
+44 1635 579444  
info@carbosynth.com

### 1.4. Emergency telephone number

**Emergency telephone**

+44 7887 998634

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification (EC 1272/2008)**

- **Physical hazards**: Not Classified
- **Health hazards**: Acute Tox. 2 - H300 Acute Tox. 1 - H310 Acute Tox. 1 - H330 Skin Corr. 1A - H314 Eye Dam. 1 - H318
- **Environmental hazards**: Not Classified

### 2.2. Label elements

**EC number**

277-550-5

**Pictogram**

[![Pictogram](image)](image)

**Signal word**

Danger
Triethylamine trihydrofluoride

Hazard statements
H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.

Precautionary statements
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards
No data available.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name Triethylamine trihydrofluoride
CAS number 73602-61-6
EC number 277-550-5
Chemical formula C₆H₁₈F₃N

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Get medical advice/attention if you feel unwell.
Inhalation Remove person to fresh air and keep comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. If breathing stops, provide artificial respiration. Get medical attention if symptoms are severe or persist.
Ingestion Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if symptoms are severe or persist.
Skin contact Remove contaminated clothing. Rinse with water. Continue to rinse for at least 15 minutes. Wash contaminated clothing before reuse. Get medical attention if symptoms are severe or persist.
Eye contact Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist.

4.2. Most important symptoms and effects, both acute and delayed

General information See Section 11 for additional information on health hazards.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards None known.
Triethylamine trihydrofluoride

Hazardous combustion products
Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours. Oxides of carbon. Oxides of nitrogen. Hydrogen fluoride (HF).

5.3. Advice for firefighters
Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents. Use protective equipment appropriate for surrounding materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Personal precautions
Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid inhalation of vapours. Provide adequate ventilation. Eliminate all sources of ignition. Keep unnecessary and unprotected personnel away from the spillage.

6.2. Environmental precautions
Environmental precautions
Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up
Wear protective clothing as described in Section 8 of this safety data sheet. Absorb spillage with sand or other inert absorbent. Clear up spills immediately and dispose of waste safely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Provide adequate ventilation. For waste disposal, see Section 13.

6.4. Reference to other sections
Reference to other sections
For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Usage precautions
Wear protective clothing as described in Section 8 of this safety data sheet. Wash hands thoroughly after handling. Provide adequate ventilation. Avoid contact with skin and eyes. Avoid inhalation of vapours. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities
Storage precautions
Keep container tightly closed. Store in a cool and well-ventilated place. Keep containers upright. Do not store in glass. Keep away from heat. Protect from light. Store at temperatures between 2°C and 8°C.

7.3. Specific end use(s)
Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters
Occupational exposure limits
No exposure limits known for ingredient(s).

8.2. Exposure controls
Appropriate engineering controls
Provide adequate ventilation.
Triethylamine trihydrofluoride

**Eye/face protection**
Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

**Hand protection**
Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374.

**Other skin and body protection**
Wear appropriate clothing to prevent repeated or prolonged skin contact.

**Respiratory protection**
Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is ‘CE’-marked. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

**Environmental exposure controls**
Keep container tightly sealed when not in use.

### 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><strong>Appearance</strong></td>
<td>Clear liquid.</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Colourless. to Yellow. to Orange.</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Pungent.</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
<td>-29 to -27°C</td>
</tr>
<tr>
<td><strong>Initial boiling point and range</strong></td>
<td>70°C @ 15 mm Hg</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>87°C</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>0.989 g/cm³ @ 25°C</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td>Soluble in water.</td>
</tr>
<tr>
<td><strong>Partition coefficient</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Decomposition Temperature</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Oxidising properties</strong></td>
<td>No data available.</td>
</tr>
</tbody>
</table>
**Triethylamine trihydrofluoride**

### 9.2. Other information

**Molecular weight**

| 161.21 |

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

**Reactivity**

No data available.

#### 10.2. Chemical stability

**Stability**

Stable under the prescribed storage conditions.

#### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions**

No data available.

#### 10.4. Conditions to avoid

**Conditions to avoid**

Heat, sparks, flames. Water, moisture.

#### 10.5. Incompatible materials

**Materials to avoid**


#### 10.6. Hazardous decomposition products

**Hazardous decomposition products**


### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

**Acute toxicity - oral**

**Notes (oral LD₅₀)** Acute Tox. 2 - H300 Fatal if swallowed.

**ATE oral (mg/kg)** 5.0

**Acute toxicity - dermal**

**Notes (dermal LD₅₀)** Acute Tox. 1 - H310 Fatal in contact with skin.

**ATE dermal (mg/kg)** 5.0

**Acute toxicity - inhalation**

**Notes (inhalation LC₅₀)** Acute Tox. 1 - H330 Fatal if inhaled.

**ATE Inhalation (vapours mg/l)** 0.05

**Skin corrosion/irritation**

**Animal data** Skin Corr. 1A - H314 Causes severe burns.

**Serious eye damage/irritation**

**Eye Dam. 1 - H318** Corrosive to skin. Corrosivity to eyes is assumed.

**Respiratory sensitisation**

**Based on available data the classification criteria are not met.**

**Skin sensitisation**

**Based on available data the classification criteria are not met.**

**Germ cell mutagenicity**

**Genotoxicity - in vitro** Based on available data the classification criteria are not met.
Triethylamine trihydrofluoride

Carcinogenicity

Based on available data the classification criteria are not met.

IARC carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

Reproductive toxicity - fertility

Based on available data the classification criteria are not met.

Reproductive toxicity - development

Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure

Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure

Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Based on available data the classification criteria are not met.

General information

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation

A single exposure may cause the following adverse effects: Difficulty in breathing. Unconsciousness, possibly death.

Ingestion

A single exposure may cause the following adverse effects: Unconsciousness, possibly death. May cause stomach pain or vomiting. May cause severe internal injury. Small amounts may cause serious damage.

Skin contact

A single exposure may cause the following adverse effects: Pain. Unconsciousness, possibly death.

Eye contact

Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

Route of exposure

Ingestion Inhalation Skin and/or eye contact

Target organs

No specific target organs known.

SECTION 12: Ecological Information

Ecotoxicity

Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Toxicity

Based on available data the classification criteria are not met.

12.2. Persistence and degradability

Persistence and degradability

The degradability of the product is not known.

12.3. Bioaccumulative potential

Bioaccumulative potential

No data available on bioaccumulation.

Partition coefficient

No data available.

12.4. Mobility in soil

Mobility

No data available.
12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment  No data available.

12.6. Other adverse effects

Other adverse effects  None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information  Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)  2922
UN No. (IMDG)  2922
UN No. (ICAO)  2922
UN No. (ADN)  2922

14.2. UN proper shipping name

14.3. Transport hazard class(es)

ADR/RID class  8
ADR/RID subsidiary risk  6.1
ADR/RID classification code  CT1
ADR/RID label  8
IMDG class  8
IMDG subsidiary risk  6.1
ICAO class/division  8
ICAO subsidiary risk  6.1
ADN class  8
ADN subsidiary risk  6.1
Transport labels

14.4. Packing group

ADR/RID packing group  I
IMDG packing group  I
ADN packing group  I
ICAO packing group  I
Triethylamine trihydrofluoride

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS F-A, S-B
ADR transport category 1
Emergency Action Code 2X
Hazard Identification Number 886

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

SECTION 15: Regulatory information

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

National regulations
Health and Safety at Work etc. Act 1974 (as amended).
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
EH40/2005 Workplace exposure limits.

EU legislation

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories
US - TSCA
Present.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
CAS: Chemical Abstracts Service.
ATE: Acute Toxicity Estimate.
LC₅₀: Lethal Concentration to 50 % of a test population.
LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
EC₅₀: 50% of maximal Effective Concentration.
PBT: Persistent, Bioaccumulative and Toxic substance.
vPvB: Very Persistent and Very Bioaccumulative.
Triethylamine trihydrofluoride

Training advice
Only trained personnel should use this material.

Revision date
24/10/2018

Revision
2

Supersedes date
24/11/2017

SDS number
144929

Hazard statements in full
H300 Fatal if swallowed.
H310 Fatal in contact with skin.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H330 Fatal if inhaled.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.