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

1.1. Product identifier

Product form: Substance
Physical state: Solid
Substance name: COPPER(II) TRIFLUOROMETHANESULFONATE
Product code: CXCU083
Formula: C2CuF6O6S2
Synonyms: COPPER TRIFLATE, TRIFLUOROMETHANESULFONIC ACID COPPER SALT, METHANESULFONIC ACID, TRIFLUORO-, COPPER(2+) SALT
Chemical family: METAL COMPOUND

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

1.2.1. Relevant identified uses

Use of the substance/mixture: Chemical intermediate

1.2.2. Uses advised against

No additional information available

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

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelestde.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 according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 1C H314
Serious eye damage/eye irritation, Category 1 H318

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP): 

Signal word (CLP): Danger
Hazard statements (CLP): H314 - Causes severe skin burns and eye damage.
Precautionary statements (CLP): P280 - Wear protective gloves/protective clothing/eye protection/face protection.
COPPER(II) TRIFLUOROMETHANESULFONATE
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P260 - Do not breathe dust.
P264 - Wash hands thoroughly after handling.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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.
P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type: Mono-constituent
Name: COPPER(II) TRIFLUOROMETHANESULFONATE
CAS-No.: 34946-82-2
EC-No.: 252-300-8

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper(II) trifluoromethanesulphonate</td>
<td>(CAS-No.) 34946-82-2</td>
<td>95 - 100</td>
<td>Skin Corr. 1C, H314; Eye Dam. 1, H318</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 252-300-8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures

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 person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of 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.

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

Symptoms/effects: Causes severe skin burns and eye damage.
Symptoms/effects after inhalation: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact: Causes (severe) skin burns.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: No information available.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Unsuitable extinguishing media: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters

Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid contact with skin and eyes. Do not breathe dust.
### SECTION 6: Accidental release measures

6.1. **Personal precautions, protective equipment and emergency procedures**

6.1.1. **For non-emergency personnel**

<table>
<thead>
<tr>
<th>Protective equipment</th>
<th>:</th>
<th>Wear protective equipment as described in Section 8.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency procedures</td>
<td>:</td>
<td>Evacuate unnecessary personnel.</td>
</tr>
</tbody>
</table>

6.1.2. **For emergency responders**

<table>
<thead>
<tr>
<th>Protective equipment</th>
<th>:</th>
<th>Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: “Exposure controls/personal protection”.</th>
</tr>
</thead>
</table>

6.2. **Environmental precautions**

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. **Methods and material for containment and cleaning up**

<table>
<thead>
<tr>
<th>For containment</th>
<th>:</th>
<th>Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods for cleaning up</td>
<td>:</td>
<td>Sweep or shovel spills into appropriate container for disposal.</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Additional hazards when processed</th>
<th>:</th>
<th>Material is hygroscopic, absorbing water on exposure to air.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precautions for safe handling</td>
<td>:</td>
<td>Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Provide local exhaust or general room ventilation to minimize exposure to dust.</td>
</tr>
<tr>
<td>Hygiene measures</td>
<td>:</td>
<td>Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.</td>
</tr>
</tbody>
</table>

7.2. **Conditions for safe storage, including any incompatibilities**

<table>
<thead>
<tr>
<th>Storage conditions</th>
<th>:</th>
<th>Keep container tightly closed. Store locked up.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage area</td>
<td>:</td>
<td>Store in a well-ventilated place. Store away from heat.</td>
</tr>
</tbody>
</table>

7.3. **Specific end use(s)**

No additional information available

### SECTION 8: Exposure controls/personal protection

8.1. **Control parameters**

No additional information available

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 dust and mist (teal cartridge) respirator.

### SECTION 9: Physical and chemical properties

9.1. **Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Physical state</th>
<th>:</th>
<th>Solid</th>
</tr>
</thead>
</table>
### COPPER(II) TRIFLUOROMETHANESULFONATE

**Safety Data Sheet**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid. Turns dark blue on hydration.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>361.68 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Pale blue.</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>No additional information available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>&gt; 400 °C (72-8°C-dehydrates)</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

#### 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 at room temperature.

#### 10.3. Possibility of hazardous reactions
No additional information available

#### 10.4. Conditions to avoid
No additional information available

#### 10.5. Incompatible materials

#### 10.6. Hazardous decomposition products
Copper oxide fumes. Organic acid and organic vapors.

### 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 sensitisation**: Not classified
- **Germ cell mutagenicity**: Not classified
- **Carcinogenicity**: Not classified
  - None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.
- **Reproductive toxicity**: Not classified
- **STOT-single exposure**: Not classified
COPPER(II) TRIFLUOROMETHANESULFONATE
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STOT-repeated exposure: Not classified
Aspiration hazard: Not classified
Symptoms/effects after inhalation: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact: Causes (severe) skin burns.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: No information available.
Reason for classification: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
Acute aquatic toxicity: Not classified
Chronic aquatic toxicity: Not classified

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. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
Other adverse effects: This substance may be hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Sewage disposal recommendations: Do not dispose of waste into sewer.
Product/Packaging disposal recommendations: 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
In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR) : 3261
UN-No. (IMDG) : 3261
UN-No. (IATA) : 3261
UN-No. (ADN) : 3261
UN-No. (RID) : 3261

14.2. UN proper shipping name
Proper Shipping Name (ADR) : CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.
Proper Shipping Name (IMDG) : CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.
Proper Shipping Name (IATA) : Corrosive solid, acidic, organic, n.o.s.
Proper Shipping Name (ADN) : CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.
Proper Shipping Name (RID) : CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.
Transport document description (ADR) : UN 3261 CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (COPPER(II) TRIFLUOROMETHANESULFONATE), 8, III, (E)
Transport document description (IMDG) : UN 3261 CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (COPPER(II) TRIFLUOROMETHANESULFONATE), 8, III
Transport document description (IATA) : UN 3261 Corrosive solid, acidic, organic, n.o.s. (COPPER(II) TRIFLUOROMETHANESULFONATE), 8, III
Transport document description (ADN) : UN 3261 CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (COPPER(II) TRIFLUOROMETHANESULFONATE), 8, III
Transport document description (RID) : UN 3261 CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (COPPER(II) TRIFLUOROMETHANESULFONATE), 8, III
### 14.3. Transport hazard class(es)

<table>
<thead>
<tr>
<th></th>
<th>ADR</th>
<th>IMDG</th>
<th>IATA</th>
<th>ADN</th>
<th>RID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport hazard class(es) (ADR)</td>
<td>: 8</td>
<td>: 8</td>
<td>: 8</td>
<td>: 8</td>
<td>: 8</td>
</tr>
<tr>
<td>Danger labels (ADR)</td>
<td>: B</td>
<td>: B</td>
<td>: B</td>
<td>: B</td>
<td>: B</td>
</tr>
</tbody>
</table>

### 14.4. Packing group

<table>
<thead>
<tr>
<th></th>
<th>ADR</th>
<th>IMDG</th>
<th>IATA</th>
<th>ADN</th>
<th>RID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group (ADR)</td>
<td>: III</td>
<td>: III</td>
<td>: III</td>
<td>: III</td>
<td>: III</td>
</tr>
<tr>
<td>Packing group (IMDG)</td>
<td>: III</td>
<td>: III</td>
<td>: III</td>
<td>: III</td>
<td>: III</td>
</tr>
<tr>
<td>Packing group (IATA)</td>
<td>: III</td>
<td>: III</td>
<td>: III</td>
<td>: III</td>
<td>: III</td>
</tr>
</tbody>
</table>

### 14.5. Environmental hazards

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dangerous for the environment</td>
<td>: No</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>: No</td>
</tr>
<tr>
<td>Other information</td>
<td>: No supplementary information available</td>
</tr>
</tbody>
</table>
14.6. Special precautions for user

- Overland transport
  - Classification code (ADR): C4
  - Special provisions (ADR): 274
  - Limited quantities (ADR): 5kg
  - Excepted quantities (ADR): E1
  - Packing instructions (ADR): P002, IBC08, LP02, R001
  - Mixed packing provisions (ADR): MP10
  - Portable tank and bulk container instructions (ADR): T1
  - Portable tank and bulk container special provisions (ADR): TP33
  - Tank code (ADR): SGAV, L4BN
  - Vehicle for tank carriage: AT
  - Transport category (ADR): 3
  - Special provisions for carriage - Bulk (ADR): VC1, VC2, AP7
  - Hazard identification number (Kemler No.): 80
  - Orange plates: 80
  - Tunnel restriction code (ADR): E
  - EAC code: 2X

- Transport by sea
  - Special provisions (IMDG): 223, 274
  - Limited quantities (IMDG): 5 kg
  - Excepted quantities (IMDG): E1
  - Packing instructions (IMDG): P002, LP02
  - IBC packing instructions (IMDG): IBC08
  - IBC special provisions (IMDG): B3
  - Tank instructions (IMDG): T1
  - Tank special provisions (IMDG): TP33
  - EmS-No. (Fire): F-A
  - EmS-No. (Spillage): S-B
  - Stowage category (IMDG): A
  - Properties and observations (IMDG): Causes burns to skin, eyes and mucous membranes.

- Air transport
  - PCA Excepted quantities (IATA): E1
  - PCA Limited quantities (IATA): Y845
  - PCA limited quantity max net quantity (IATA): 5kg
  - PCA packing instructions (IATA): 860
  - PCA max net quantity (IATA): 25kg
  - CAO packing instructions (IATA): 864
  - CAO max net quantity (IATA): 100kg
  - Special provisions (IATA): A3
  - ERG code (IATA): 8L

- Inland waterway transport
  - Classification code (ADN): C4
  - Special provisions (ADN): 274
  - Limited quantities (ADN): 5 kg
  - Excepted quantities (ADN): E1
  - Equipment required (ADN): PP, EP
  - Number of blue cones/lights (ADN): 0

- Rail transport
  - Classification code (RID): C4
COPPER(II) TRIFLUOROMETHANESULFONATE
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Special provisions (RID) : 274
Limited quantities (RID) : 5kg
Excepted quantities (RID) : E1
Packing instructions (RID) : P002, IBC08, LP02, R001
Special packing provisions (RID) : B3
Mixed packing provisions (RID) : MP10
Portable tank and bulk container instructions (RID) : T1
Portable tank and bulk container special provisions (RID) : TP33
Tank codes for RID tanks (RID) : SGAV, L4BN
Transport category (RID) : 3
Special provisions for carriage – Bulk (RID) : VC1, VC2, AP7
Colis express (express parcels) (RID) : CE11
Hazard identification number (RID) : 80

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
COPPER(II) TRIFLUOROMETHANESULFONATE is not on the REACH Candidate List
COPPER(II) TRIFLUOROMETHANESULFONATE is not on the REACH Annex XIV List
COPPER(II) TRIFLUOROMETHANESULFONATE is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

15.1.2. National regulations

Germany
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark
Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment
No additional information available

SECTION 16: Other information

Abbreviations and acronyms:
Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, 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; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information : Prepared by safety and environmental affairs.
COPPER(II) TRIFLUOROMETHANESULFONATE  
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Full text of H- and EUH-statements:  

| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Skin Corr. 1C | Skin corrosion/irritation, Category 1C |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |

SDS EU (REACH Annex II) - Custom  
The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.  

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