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

1.1. Product identifier

<table>
<thead>
<tr>
<th>Product form</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Substance name</td>
<td>SILVER TRIFLUOROACETATE</td>
</tr>
<tr>
<td>Product code</td>
<td>CXSV080</td>
</tr>
<tr>
<td>Formula</td>
<td>C2AgF3O2</td>
</tr>
<tr>
<td>Synonyms</td>
<td>TRIFLUOROACETIC ACID, SILVER SALT</td>
</tr>
<tr>
<td>Chemical family</td>
<td>METAL COMPOUND</td>
</tr>
</tbody>
</table>

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)
Skin Irrit. 2 H315
Eye Irrit. 2A H319

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US): !

Signal word (GHS-US): Warning
Hazard statements (GHS-US): H315 - Causes skin irritation
Precautionary statements (GHS-US): P280 - Wear protective gloves/protective clothing/eye protection/face protection
P264 - Wash hands thoroughly after handling
P302+P352 - If on skin: Wash with plenty of water
P332+P313 - If skin irritation occurs: Get medical advice/attention
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P317 - Keep container tightly closed
P362 - Take off contaminated clothing and wash before reuse

2.3. Other hazards
No additional information available

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

SECTION 3: Composition/information on ingredients

3.1. Substance

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Mono-constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>SILVER TRIFLUOROACETATE</td>
</tr>
</tbody>
</table>
SILVER TRIFLUOROACETATE
Safety Data Sheet

CAS No : 2966-50-9
EC no : 221-004-0

Name | Product identifier | % | Classification (GHS-US) |
--- | --- | --- | --- |
Silver trifluoroacetate | (CAS No) 2966-50-9 | > 95 | Skin Irrit. 2, H315
 | | | Eye Irrit. 2A, H319 |

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 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 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/injuries after inhalation : May cause irritation to the respiratory tract.
Symptoms/injuries after skin contact : Causes skin irritation.
Symptoms/injuries after eye contact : Causes serious eye irritation.
Symptoms/injuries after ingestion : No information available.
Chronic symptoms : The absorption of silver compounds into the circulation and subsequent deposition of reduced silver may result in the production of grayish pigmentation in the skin and mucous membranes, a condition known as argyria.

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 : 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 : 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 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
Emergency procedures : Evacuate unnecessary personnel.

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.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal.

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 contact with skin and eyes. Do not breathe dust. Provide local exhaust or general room ventilation to minimize exposure to dust. Avoid dust formation.
Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

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

<table>
<thead>
<tr>
<th>Storage conditions</th>
<th>Keep container tightly closed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage area</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

<table>
<thead>
<tr>
<th>Silver trifluoroacetate (2966-50-9)</th>
<th>USA ACGIH</th>
<th>ACGIH TWA (mg/m³)</th>
<th>0.01 as Ag</th>
</tr>
</thead>
</table>

#### 8.2. Exposure controls

- **Hand protection**: Neoprene or nitrile rubber gloves.
- **Eye protection**: Chemical goggles. 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 (orange cartridge) respirator.

### 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>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Powder</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>220.88 g/mol</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>251 - 253 °C decomposes</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>Vapor pressure</td>
<td>&lt; 1 mm Hg @ 25°C</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>VOC content</td>
<td>&lt; 3 %</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>Oxidizing properties</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
Heat. Open flame. Sparks.

10.5. Incompatible materials

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

- Acute toxicity : Not classified
- Skin corrosion/irritation : Causes skin irritation.
- Serious eye damage/irritation : Causes serious eye irritation.
- 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 inhalation : May cause irritation to the respiratory tract.
Symptoms/Injuries after skin contact : Causes skin irritation.
Symptoms/Injuries after eye contact : Causes serious eye irritation.
Symptoms/Injuries after ingestion : No information available.

Chronic symptoms : The absorption of silver compounds into the circulation and subsequent deposition of reduced silver may result in the production of grayish pigmentation in the skin and mucous membranes, a condition known as argyria.

Reason for classification : Expert judgment

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 additional information available
Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations : Dispose of solid materials or residues at a licensed site. Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.
SECTION 14: Transport information

14.1. UN number
Not regulated for transport.

14.2. UN proper shipping name
Not applicable

14.3. Additional information
Other information: No supplementary information available.

Transport by sea
No additional information available

Air transport
No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations
Silver trifluoroacetate (2966-50-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
Silver trifluoroacetate (2966-50-9)
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

<table>
<thead>
<tr>
<th>SILVER TRIFLUOROACETATE(2966-50-9)</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California - Proposition 65 - Carcinogens List</td>
<td>No</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Developmental Toxicity</td>
<td>No</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</td>
<td>No</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</td>
<td>No</td>
</tr>
</tbody>
</table>

SECTION 16: Other information

Abbreviations and acronyms:
- 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 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

Full text of H-phrases:

- **Eye Irrit. 2A**: Serious eye damage/eye irritation Category 2A
- **Skin Irrit. 2**: Skin corrosion/irritation Category 2
- **H315**: Causes skin irritation
- **H319**: Causes serious eye irritation
SILVER TRIFLUOROACETATE
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HMIS III Rating

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given</td>
</tr>
<tr>
<td>Flammability</td>
<td>1 Slight Hazard</td>
</tr>
<tr>
<td>Physical</td>
<td>0 Minimal Hazard</td>
</tr>
</tbody>
</table>

Prepared by safety and environmental affairs.

Date of issue: 06/03/2015       Version: 1.0

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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