

# Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07

Date of issue: 05/12/2025

Revised on 05/12/2025

## 1 Identification

- **Product Identifier**
- **Trade Name:** Thiofluor™
- **CAS Number:** 13242-44-9
- **Other means of identification**
- **Product Number:** 3700-2000
- **Relevant identified uses of the substance or mixture and uses advised against:**  
No further relevant information available.
- **Product Description:** Thiofluor™ (2-(Dimethylamino)ethanethiol Hydrochloride)
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**  
Pickering Laboratories, Inc.  
1280 Space Park Way  
Mountain View, CA 94043  
Phone: (650) 694-6700  
Fax: (650) 968-0749  
www.pickeringlabs.com  
support@pickeringlabs.com
- **Emergency telephone number:**  
Clean Harbors Environmental Services  
1-800-645-8265

## 2 Hazard(s) Identification

- **Classification of the substance or mixture:**



|  |  |
|--|--|
| Skin irritation 2                                  | H315 Causes skin irritation.           |
| Eye irritation 2A                                  | H319 Causes serious eye irritation.    |
| Specific target organ toxicity (single exposure) 3 | H335 May cause respiratory irritation. |

- **Label elements:**
- **Hazard pictograms:**



- **Signal word:** Warning
- **Hazard-determining components of labeling:**  
2-(dimethylamino)ethanethiol hydrochloride
- **Hazard statements:**  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.
- **Precautionary statements:**  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.  
P264 Wash thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves / eye protection / face protection.  
P302+P352 If on skin: Wash with plenty of water.

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- 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.
- P312 Call a poison center/doctor if you feel unwell.
- P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Unknown acute toxicity:**

This value refers to knowledge of known, established toxicological or ecotoxicological values.  
0 % of the mixture consists of component(s) of unknown toxicity.

· **Information pertaining to particular dangers for man and environment:**

· **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **Hazard(s) not otherwise classified (HNOC):** None known

· **Classification according to (d)(1)(ii) of § 1910.1200**

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

· **Hazards not otherwise classified**

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

\* **3 Composition/Information on Ingredients**

· **Chemical characterization: Substance**

· **Description:** Substance

· **Dangerous Components:**

|                   |  |      |
|-------------------|--|------|
| CAS: 13242-44-9   | 2-(dimethylamino)ethanethiol hydrochloride   | 100% |
| RTECS: KJ 1051000 | ⚠ Skin irritation 2, H315; Eye irritation 2A, H319; Specific target organ toxicity (single exposure) 3, H335 |      |

\* **4 First-Aid Measures**

· **Description of first aid measures**

· **General information:** If symptoms persist, call a physician.

· **After inhalation:**

Remove affected person to fresh air. Seek medical attention if symptoms persist.  
In case of unconsciousness place patient stably in the side position for transportation.

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- **After skin contact:**  
Immediately flush with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Seek medical assistance.  
If skin irritation occurs, consult a doctor.
- **After eye contact:**  
Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.  
If easy to do so, remove contact lenses if worn.  
If eye irritation occurs, consult a doctor.
- **After swallowing:**  
If swallowed and symptoms occur, consult a doctor.  
If conscious, rinse mouth with water ensuring that the rinse is not swallowed. Seek medical assistance.
- **Most important symptoms and effects, both acute and delayed:** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed:**  
No further relevant information available.

### 5 Fire-Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** No further relevant information.
- **Special hazards arising from the substance or mixture:**  
Nitrogen oxides (NO<sub>x</sub>)  
Carbon Dioxide (CO<sub>2</sub>)  
Carbon monoxide (CO)  
Sulphur dioxide (SO<sub>2</sub>)  
Hydrogen chloride (HCl)
- **Advice for firefighters**
- **Special protective equipment for firefighters:**  
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

### 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:**  
Avoid formation of dust.  
Avoid breathing dust.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Use the appropriate tools to collect the material and dispose of it in an approved waste disposal container.  
Ensure adequate ventilation.  
Dispose of the collected material according to regulations.

· **PAC-1:**

None of the ingredients are listed.

· **PAC-2:**

None of the ingredients are listed.

· **PAC-3:**

None of the ingredients are listed.

· **Reference to other sections:**

See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

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### 7 Handling and Storage

- **Precautions for safe handling:**  
Avoid contact with skin, eyes and clothing  
Avoid breathing dust.  
Use personal protection equipment as outlined in section 8.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**  
Store in dry conditions at a temperature range of 8°C - 25°C.  
Handle and store under inert gas. Hygroscopic. Air and moisture sensitive.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s):** No further relevant information available.

### 8 Exposure Controls/Personal Protection

- **Control parameters:**
- **Components with occupational exposure limits:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
- **Exposure controls:**
- **Appropriate engineering controls** No further data; see section 7.
- **Personal protective equipment**
- **General protective and hygienic measures:**  
Use adequate exhaust ventilation to prevent inhalation of dust particles.  
Do not eat or drink while handling product.  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing and wash before reuse.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**



NIOSH approved respirator, as conditions warrant.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves:**

Latex or vinyl

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

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· **Penetration time of glove material:**

The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Lab coat

· **Limitation and supervision of exposure into the environment:** None

### 9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Physical state**

Solid

· **Color:**

White

· **Odor:**

Slight

· **Odor threshold:**

Not determined.

· **Melting point/Melting range:**

158-160 °C (316.4-320 °F)

· **Boiling point/Boiling range:**

Not determined.

· **Flammability:**

Product is not flammable.

· **Explosion limits:**

· **Lower:**

Not determined.

· **Upper:**

Not determined.

· **Flash point:**

None

· **Auto igniting:**

Not applicable

· **Decomposition temperature:**

Not determined.

· **pH-value:**

Not applicable.

· **Viscosity:**

· **Kinematic:**

Not applicable.

· **Dynamic:**

Not applicable.

· **Solubility in / Miscibility with:**

· **Water:**

Soluble.

· **Partition coefficient (n-octanol/water):**

Not determined.

· **Vapor pressure:**

Not applicable.

· **Density:**

Not determined.

· **Relative density:**

Not determined.

· **Vapor density:**

Not applicable.

· **Particle characteristics**

Not determined.

· **Other information:**

· **Appearance:**

· **Form:**

Crystalline

· **Important information on protection of health and environment, and on safety.**

· **Ignition temperature:**

Not determined.

· **Danger of explosion:**

Product does not present an explosion hazard.

· **Solvent content:**

· **VOC content:**

0.00 %

· **Solids content:**

100.0 %

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- **Change in condition**
- **Evaporation rate:** Not applicable.

### 10 Stability and Reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:**  
Carbon dioxide and carbon monoxide may form when heated to decomposition.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:**  
Dust generation.  
Avoid strong oxidizers.
- **Incompatible materials:** Strong oxidizing agents.
- **Hazardous decomposition products:** Carbon dioxide, carbon monoxide and nitrogen oxides.
- **Additional information:** Light and air sensitive.

### 11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:** No data available.
- **Primary irritant effect:**
- **On the skin:**  
Mild irritant effect.  
Irritant to skin and mucous membranes.
- **On the eye:**  
Mild irritant effect.  
Irritating effect.
- **Additional toxicological information:**
- **Interactive effects** No interactive effects between components are known.

- **Carcinogenic categories:**

|  |
|--|
| · <b>IARC (International Agency for Research on Cancer):</b> |
| None of the ingredients are listed.                          |

|   |
|---|
| · <b>NTP (National Toxicology Program):</b> |
| None of the ingredients are listed.         |

|   |
|---|
| · <b>OSHA-Ca (Occupational Safety &amp; Health Administration):</b> |
| None of the ingredients are listed.                                 |

- **Alternative sources for toxicological information**  
No non-standard sources for toxicological information where used.

### 12 Ecological Information

- **Toxicity:**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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- **Other adverse effects:**
- **Additional ecological information:**
- **General notes:**

Do not allow undiluted product or product that has not been neutralized to reach ground water, water course or sewage system.

### 13 Disposal Considerations

- **Waste treatment methods**

- **Recommendation:**

Do not allow product to reach sewage system.

This product may be mixed with a combustible solvent and burned in a chemical incinerator equipped with an after burner and scrubber. This product can also be sent to an EPA approved waste disposal facility.

Observe all federal, state and local environmental regulations when disposing of this material.

- **Uncleaned packaging**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport Information

- **UN-Number:**

- **DOT, ADR/ADN, IATA**

UN3335

- **IMDG**

Non-Regulated Material

- **UN proper shipping name:**

- **DOT, IATA**

Aviation regulated solid, n.o.s. (2-(dimethylamino)ethanethiol hydrochloride)

- **ADR/ADN**

UN3335 Aviation regulated solid, n.o.s.

- **IMDG**

Non-Regulated Material

- **Transport hazard class(es):**

- **DOT, ADR/ADN, IATA**

- **Class:**

9 Miscellaneous dangerous substances and articles

- **Label:**

9

- **ADN/R Class:**

Non-Regulated Material

- **Packing group:**

- **DOT, IATA**

III

- **ADR/ADN, IMDG**

Non-Regulated Material

- **Environmental hazards:**

Not applicable.

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:**

Not applicable.

- **Special precautions for user:**

Warning: Miscellaneous dangerous substances and articles

- **UN "Model Regulation":**

UN 3335 AVIATION REGULATED SOLID, N.O.S. 9

### 15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**

- **SARA (Superfund Amendments and Reauthorization):**

|  |
|--|
| <b>Section 355 (extremely hazardous substances):</b> |
| None of the ingredients are listed.                  |

|  |
|--|
| <b>Section 313 (Specific toxic chemical listings):</b> |
| None of the ingredients are listed.                    |

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- **TSCA (Toxic Substances Control Act):**  
Substance is listed.

|                                       |
|---------------------------------------|
| All components have the value ACTIVE. |
|---------------------------------------|

- **Hazardous Air Pollutants**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **California Proposition 65:**

- **Chemicals known to cause cancer:**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **Chemicals known to cause reproductive toxicity for females:**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **Chemicals known to cause reproductive toxicity for males:**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **Chemicals known to cause developmental toxicity:**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **New Jersey Right-to-Know List:**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **New Jersey Special Hazardous Substance List:**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **Pennsylvania Right-to-Know List:**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **Pennsylvania Special Hazardous Substance List:**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **Carcinogenic categories:**

- **EPA (Environmental Protection Agency):**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **TLV (Threshold Limit Value established by ACGIH):**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **NIOSH-Ca (National Institute for Occupational Safety and Health):**

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



- **Signal word:** Warning

- **Hazard-determining components of labeling:**

2-(dimethylamino)ethanethiol hydrochloride

- **Hazard statements:**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

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· **Precautionary statements:**

- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P264 Wash thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves / eye protection / face protection.
- P302+P352 If on skin: Wash with plenty of water.
- 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.
- P312 Call a poison center/doctor if you feel unwell.
- P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

The product is not subject to be labelled according with the prevailing version of the regulations on hazardous substances.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Date of previous version** 02/03/2021

· **Version number of previous version:** 9

· **Date of preparation** 05/12/2025

· **Abbreviations and acronyms:**

- ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
- ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- NIOSH: National Institute for Occupational Safety and Health
- OSHA: Occupational Safety & Health Administration
- TLV: Threshold Limit Value
- PEL: Permissible Exposure Limit
- REL: Recommended Exposure Limit
- Skin irritation 2: Skin corrosion/irritation – Category 2
- Eye irritation 2A: Serious eye damage/eye irritation – Category 2A
- Specific target organ toxicity (single exposure) 3: Specific target organ toxicity (single exposure) – Category 3

· **\* Data compared to the previous version altered.**

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