Section 1 - Product and Company Information

Product Name: S-(4-Nitrobenzyl)-6-thionosine, minimum 98%
Product Number: NG256
Brand: Sigma Chemical
Company: Sigma-Aldrich
Street Address: 3005 Spruce Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5352
Emergency Phone: 314-776-6555
Fax: 800-325-5352

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS #</th>
<th>SARA 313</th>
<th>EC No</th>
<th>Annex I Index Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-(4-NITROBENZYL)-6-THIONOSINE (NBTPOTENT ADENOSINE UPTAKE INHIBITOR)</td>
<td>38046-32-7</td>
<td>No</td>
<td>253-783-4</td>
<td></td>
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</tbody>
</table>

Formula: C17H17N5O6S
Synonyms: Nitrobenzylthionosine, 6-p-Nitrobenzylthio)inosine, 6-[(4-Nitrophenyl)methyl(thio)-9-beta-D-ribofuranosyl-9H-purine

Section 3 - Hazards Identification

Emergency Overview: Caution: Avoid contact and inhalation.

Hazard Rating:
- Health: 1
- Flammability: 0
- Reactivity: 0

NFPA Rating:
- Health: 1
- Flammability: 0
- Reactivity: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure: If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

Dermal Exposure: In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A
Extinguishing Media: Suitable - Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

Section 6 - Accidental Release Measures

Methods for Cleaning Up: Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill area after material pickup is complete.

Section 7 - Handling and Storage

Handling:
- User Exposure - Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage:
- Suitable - Keep tightly closed. Store at 2-8°C

Section 8 - Exposure Controls / PPE

Engineering Controls:
- Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment:
- Respiratory - Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dust are desired, use type N95 (US) or type P1 (EN 143) dust masks.
- Hand - Protective gloves.
- Eye - Chemical safety goggles.

General Hygiene Measures:
- Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Physical State</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
<td>White</td>
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Sigma Chemical - NG256
Page 2
<table>
<thead>
<tr>
<th>Molecular Weight</th>
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<tbody>
<tr>
<td>pH</td>
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<tr>
<td>BP/BP Range</td>
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<tr>
<td>MP/MR Range</td>
<td>187 - 190 ºC</td>
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<tr>
<td>Freezing Point</td>
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<tr>
<td>Vapor Pressure</td>
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<tr>
<td>Vapor Density</td>
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<tr>
<td>Saturated Vapor Conc.</td>
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<tr>
<td>SG/Density</td>
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<tr>
<td>Bulk Density</td>
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<tr>
<td>Odor Threshold</td>
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<tr>
<td>Volatile%</td>
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<tr>
<td>VOC Content</td>
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<tr>
<td>Water Content</td>
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</tr>
<tr>
<td>Solvent Content</td>
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<td>Viscosity</td>
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<td>Partition Coefficient</td>
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<tr>
<td>Decomposition Temp.</td>
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<td>Flash Point °F</td>
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<tr>
<td>Flash Point °C</td>
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<tr>
<td>Explosion Limits</td>
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<tr>
<td>Flammability</td>
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<tr>
<td>Autoignition Temp</td>
<td>N/A</td>
</tr>
<tr>
<td>Solubility</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>N/A = not available</td>
</tr>
</tbody>
</table>

**Section 10 - Stability and Reactivity**

- **Stability:**
  - Stable
  - Stable

- **Materials to Avoid:**
  - Strong oxidizing agents

- **Hazardous Decomposition Products:**
  - Carbon monoxide
  - Carbon dioxide
  - Nitrogen oxides
  - Sulfur oxides

- **Hazardous Polymerization:**
  - Will not occur

**Section 11 - Toxicological Information**

- **Route of Exposure:**
  - **Skin Contact:**
    - May cause skin irritation.
  - **Skin Absorption:**
    - May be harmful if absorbed through skin.
  - **Eye Contact:**
    - May cause eye irritation.
  - **Inhalation:**
    - May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

- **Ingestion:**
  - May be harmful if swallowed.

- **Signs and Symptoms of Exposure:**
  - To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

- **Conditions Aggravated by Exposure:**
  - None

- **RTECS Number:**
  - UC09005000

- **Chronic Exposure - Mutagen**
  - **Species:**
    - Rat
  - **Dose:**
    - 4200 NMOL/L
    - 8 UMOL/L
  - **Cell Type:**
    - Liver
    - Liver
  - **Mutation Test:**
    - DNA inhibition
    - Other mutation test systems

**Section 12 - Ecological Information**

- No data available.

**Section 13 - Disposal Considerations**

- **Appropriate Method of Disposal of Substance or Preparation:**
  - Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

**Section 14 - Transport Information**

- **DOT:**
  - Proper Shipping Name: None
  - Non-Hazardous for Transport
  - This substance is considered to be nonhazardous for transport.

- **IATA:**
  - Non-Hazardous for Air Transport
  - Non-hazardous for air transport.

**Section 15 - Regulatory Information**

- **US Classification and Label Text:**
  - US Statements:
    - Caution: Avoid contact and inhalation.

- **United States Regulatory Information:**
  - SARA Listed: No
  - Canada Regulatory Information
    - WHMIS Classification:
      - This product has been classified in accordance with the hazard criteria of the OPR and the MSDS contains all the information required by the OPR.
    - DSL: No
    - NDSL: No

**Section 16 - Other Information**

- **Disclaimer:**
  - For RM3 use only. Not for drug, household or other uses.

- **Warranty:**
  - The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for