



# SAFETY DATA SHEET

## Benfotiamine

### Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

---

#### Product identifier

**Product Name:** Benfotiamine

**Synonym:** benzenecarbothioic acid,  
S-[2-[[[(4-amino-2-methyl-5-pyrimidinyl)methyl]formylamino]-1-[2-(phosphonoxy)ethyl]-1-propen-1-yl] ester; Benzoylthiamine monophosphate; S-Benzoylthiamine O-monophosphate;

**CAS#:** 22457-89-2

**Application of the substance / the mixture:**  
For research use only - not for human or veterinary use.

#### Details of the Supplier of the Safety Data Sheet

**Manufacturer/Supplier:**  
Venogen Limited  
Rm 1104 Crawford House, 70 Queen's Rd. Central  
Central, 999077 Hong Kong

**Web site address:** <https://venogen.com>

**Information department:** Product safety department

**Emergency Contact:** CHEMTREC  
Within USA and Canada: +1-800-424-9300  
Outside USA and Canada: +1-703-527-3887

### Section 2: Hazards Identification

---

#### Classification of the Substance or Mixture

Acute toxicity, oral: Category 4  
Acute toxicity, dermal: Category 4  
Acute toxicity, inhalation: Category 4  
Skin corrosion/irritation: Category 2  
Serious eye damage/eye irritation: Category 2B

#### Label Elements

**GHS label elements:** GHS07

**Hazard pictograms:**



**Signal word:** Warning



# SAFETY DATA SHEET

## Benfotiamine

### Hazard statements:

**H302:** Harmful if swallowed  
**H312:** Harmful in contact with skin  
**H332:** Harmful if inhaled  
**H315:** Causes skin irritation  
**H320:** Causes eye irritation

### Precautionary Statements P-Codes

**Prevention:** P264, P270, P280

**Response:** P301, P302, P304, P305, P312, P313, P321, P322, P330, P332, P337, P338, P340, P351, P352, P362, P363

**Disposal:** P501

### Section 3: Composition/Information on Ingredients

---

**CAS #:** 22457-89-2

**Description:** Benfotiamine

**Concentration:** 100%

### Section 4: First Aid Measures

---

#### Description of First Aid Measures

**In case of inhalation:** Supply fresh air; get medical attention if symptoms occur.

**In case of skin contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

**In case of eye contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

**In case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

**Information for doctor:** Most important symptoms and effects, both acute and delayed. May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. No further relevant information available.

**Indication of any immediate medical attention and special treatment needed:**  
Get medical attention.

### Section 5: Fire Fighting Measures

---

#### Extinguishing media



# SAFETY DATA SHEET

## Benfotiamine

**Suitable extinguishing agents:** Use fire fighting measures that suit the environment. A solid water stream may be inefficient.

**Special hazards arising from the substance or mixture:** No further relevant information available.

**Advice for firefighters:** No further relevant information available.

**Protective equipment:** Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

### Section 6: Accidental Release Measures

---

**Protective Precautions, Protective Equipment, and Emergency Procedures:**

Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

**Environmental Precautions:** Do not allow to enter sewers/ surface or ground water.

**Methods and Material For Containment and Cleaning Up:**

Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

**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.

### Section 7: Handling and Storage

---

**Precautions for safe handling:**

Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed. Store in accordance with information listed on <https://venogen.com>.

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** None.

**Specific end use:** No further relevant information available.

### Section 8: Exposure Controls/Personal Protection

---

**Additional information about design of technical systems:** No further data; see item 7.

**Control parameters**

**Components with limit values that require monitoring at the workplace:**



# SAFETY DATA SHEET

Benfotiamine

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit. At this time, the remaining constituent has no known exposure limits.

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the remaining constituent has no known exposure limits.

**Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

## Exposure controls

### Personal protective equipment:

**General protective and hygienic measures:** The usual precautionary measures for handling chemicals should be followed.

**Protective Clothing:** Lab coat

**Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.

**Protection of hands:** Use Compatible chemical-resistant gloves. The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

**Material of gloves:** 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.

**Penetration time of glove material:** The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:** Safety glasses

**Work/Hygienic/Maintenance Practices:** Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.

## Section 9: Physical and Chemical Properties

---

### General Information on basic physical and chemical properties

**Appearance:** Solid

**Form:** Solid

**Color:** Characteristic.

**Odor:** Characteristic.

**Structural Formula:** C<sub>19</sub>H<sub>23</sub>N<sub>4</sub>O<sub>6</sub>PS

**Molecular Weight:** 466.5

**Odor threshold:** Not determined.

**pH-value:** Not applicable.

### Change in Condition



# SAFETY DATA SHEET

Benfotiamine

**Melting point/Melting range:** Not determined.  
**Boiling point/Boiling range:** Not determined.  
**Flash point:** Not applicable.  
**Flammability (solid, gaseous):** Product is not flammable.  
**Decomposition temperature:** Not determined.  
**Auto igniting:** Not determined.  
**Danger of explosion:** Product does not present an explosion hazard.  
**Explosion limits: Lower:** Not determined. **Upper:** Not determined.  
**Vapor pressure:** Not applicable.  
**Density:** Not determined.  
**Relative density:** Not determined.  
**Vapor density:** Not applicable.  
**Evaporation rate:** Not applicable.  
**Solubility in / Miscibility with Water:** Not applicable.  
**Partition coefficient (n-octanol/water):** Not applicable.  
**Viscosity: Dynamic:** Not applicable. **Kinematic:** Not applicable.  
**Solubility:** No data  
**Other information:** No further relevant information available.

## Section 10: Stability and Reactivity

---

### Chemical stability

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions:** No dangerous reactions known.

**Conditions to avoid:** No further relevant information available.

**Incompatible materials:** strong acids, strong bases, strong oxidizing agents

**Hazardous decomposition products:** carbon oxides, nitrogen oxides, phosphorous oxides

**Reactivity:** No further relevant information available.

## Section 11: Toxicological Information

---

### Acute toxicity

**Primary irritant effect on the skin:** Not determined.

**Primary irritant effect on the eye:** Not determined.

**Sensitization:** Not determined.

**Additional toxicological information:** When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

### Carcinogenic categories

**IARC (International Agency for Research on Cancer):** Substance is not listed.

**NTP (National Toxicology Program):** Substance is not listed.

**OSHA-Ca (Occupational Safety & Health Administration):** Substance is not listed.



# SAFETY DATA SHEET

## Benfotiamine

### Section 12: Ecological Information

---

#### Toxicity

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability:** No further relevant information available.

#### Behavior in environmental systems

**Bioaccumulative potential:** No further relevant information available.

**Mobility in soil:** No further relevant information available.

#### Additional ecological information

**General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

#### Results of PBT and vPvB assessment

**PBT:** No data available.

**vPvB:** No data available.

**Other adverse effects:** No further relevant information available.

### Section 13: Disposal Considerations

---

#### Waste treatment methods

**Recommendation:** Smaller quantities can be disposed of with household waste.

#### Uncleaned packagings

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

### Section 14: Transport Information

---

**Land Transport (US DOT):** Not dangerous goods.

**Land Transport (European ADR/RID):** Not dangerous goods.

**Air Transport (ICAO/IATA):** Not dangerous goods.

#### Additional Transport Information:

Transport in accordance with local, state, and federal regulations. When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore, packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

### Section 15: Regulatory Information

---

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

**CAS #:** 22457-89-2

**Description:** Benfotiamine



# SAFETY DATA SHEET

Benfotiamine

**Sara**

**Section 355 (extremely hazardous substances):** Substance is not listed.

**Section 313 (Specific toxic chemical listings):** Substance is not listed.

**TSCA (Toxic Substances Control Act):** Substance is not listed.

**Hazardous Air Pollutants:** Substance is not listed.

## Label Elements

**GHS label elements:** GHS07

**Hazard pictograms:**



**Signal word:** Warning

**Hazard statements:**

**H302:** Harmful if swallowed

**H312:** Harmful in contact with skin

**H332:** Harmful if inhaled

**H315:** Causes skin irritation

**H320:** Causes eye irritation

## Precautionary Statements P-Codes

**Prevention:** P264, P270, P280

**Response:** P301, P302, P304, P305, P312, P313, P321, P322, P330, P332, P337, P338, P340, P351, P352, P362, P363

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

## Section 16: Other Information

---

### Disclaimer:

This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

**Department issuing SDS:** Environment protection department

**Date of preparation / last revision:** 23 September 2020