

# Ampicillin Trihydrate SDS/MSDS (Safety Data Sheet)

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

\* Product Name: Ampicillin Trihydrate

\* Catalog Number: S4148

\* CAS Number: 7177-48-2

\* IUPAC Name: 4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 6-[[[(2R)-2-amino-2-phenylacetyl]amino]-3,3-dimethyl-7-oxo-, hydrate (1:3), (2S,5R,6R)-

Relevant identified uses and uses advised against

\* Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.

\* Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

\* Company: Selleck Chemicals

\* TollFree: +1 877 796-6397

\* Tel: +1 832 582-8158

\* Fax: +1 832 582-8590

Emergency telephone number

\* Emergency phone #: +1 832 582-8158

## 2. HAZARDS IDENTIFICATION

### 2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Skin irritation: Category 2. H315

Skin sensitization: Category 1. H317

Serious eye irritation: Category 2. H319

Respiratory sensitization: Category 1. H334

Specific target organ toxicity (single exposure): Category 3. H335

### 2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word

Danger

Hazard statement(s)

H315: Causes skin irritation

H317: May cause an allergic skin reaction

H319: Causes serious eye irritation

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335: May cause respiratory irritation

Precautionary statement(s)

None.

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Prevention</b> | <p>P233: Keep container tightly closed.</p> <p>P260: Do not breathe dust/fume/gas/mist/vapors/spray.</p> <p>P261: Avoid breathing dust/fume/gas/mist/vapors/spray.</p> <p>P264: Wash hands thoroughly after handling.</p> <p>P264+P265: Wash hands thoroughly after handling. Do not touch eyes.</p> <p>P271: Use only outdoors or in a well-ventilated area.</p> <p>P272: Contaminated work clothing should not be allowed out of the workplace.</p> <p>P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.</p> <p>P284: [In case of inadequate ventilation] Wear respiratory protection.</p>                                                                                                                                                                                                  |
| <b>Response</b>   | <p>P302+P352: IF ON SKIN: wash with plenty of water.</p> <p>P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P305+P351: IF IN EYES: Rinse cautiously with water for several minutes.</p> <p>P319: Get medical help if you feel unwell.</p> <p>P321: Specific treatment (see information on this label and safety datasheet)).</p> <p>P332+P317: If skin irritation occurs: Get medical help.</p> <p>P333+P317: If skin irritation or rash occurs: Get medical help.</p> <p>P337+P317: If eye irritation persists: Get medical help.</p> <p>P338: Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P342+P316: If experiencing respiratory symptoms: Get emergency medical help immediately.</p> <p>P362+P364: Take off contaminated clothing and wash it before reuse.</p> |
| <b>Storage</b>    | <p>P403: Store in a well-ventilated place.</p> <p>P403+P233: Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405: Store locked up.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Disposal</b>   | <p>P501: P501 Dispose of contents/ container to an approved waste disposal plant.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

### 2.3 Other hazards

None.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Product name: Ampicillin Trihydrate

CAS Number: 7177-48-2

PubChem CID: 23565

Molecular formula: C<sub>16</sub>H<sub>25</sub>N<sub>3</sub>O<sub>7</sub>S

Molecular weight: 403.5 g/mol

IUPAC name: (2S,5R,6R)-6-[[[(2R)-2-amino-2-phenylacetyl]amino]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid;trihydrate

### 3.2 Mixtures

Not applicable (pure substance).

## 4. FIRST-AID MEASURES

### 4.1 Description of first aid measures

Inhalation: INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to t

Skin contact: SKIN: IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.

Eye contact: EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician.

IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

Ingestion: INGESTION: DO NOT INDUCE VOMITING. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. Be prepared to transport the victim to a hospital if advised by a physician. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport

#### **4.2 Most important symptoms and effects, both acute and delayed**

See Section 11 (Toxicological Information).

#### **4.3 Indication of any immediate medical attention and special treatment needed**

Treat symptomatically. Contact a poison control center or physician for severe exposure.

### **5. FIRE-FIGHTING MEASURES**

#### **5.1 Extinguishing media**

Suitable: Water spray, dry chemical, carbon dioxide (CO<sub>2</sub>), alcohol-resistant foam.

Unsuitable: None known.

#### **5.2 Specific hazards arising from the substance or mixture**

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. (NTP, 1992)

#### **5.3 Advice for firefighters**

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

### **6. ACCIDENTAL RELEASE MEASURES**

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

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

#### **6.2 Environmental precautions**

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

### **6.3 Methods and materials for containment and cleaning up**

Sweep up or absorb with inert material (e.g., sand, vermiculite).

Place in sealed, labeled container for disposal.

Wash spill area with water.

## **7. HANDLING AND STORAGE**

### **7.1 Precautions for safe handling**

**SMALL SPILLS AND LEAKAGE:** If you spill this chemical, you should dampen the solid spill material with water, then transfer the dampened material to a suitable container. Use absorbent paper dampened with water to pick up any remaining material. Seal your contaminated clothing and the absorbent paper in a vapor-tight plastic bag for eventual disposal. Wash all contaminated surfaces with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

**STORAGE PRECAUTIONS:** You should store this chemical under refrigerated temperatures, and protect it from moisture. If possible, it would be prudent to store this compound under inert atmosphere. (NTP, 1992)

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

Store in a cool, dry, well-ventilated area. Keep container tightly closed.

Store away from incompatible materials (see Section 10).

Protect from light and moisture.

Recommended storage (industry convention for research compounds): -20°C for long-term storage; 2-8°C for short-term use and transport.

[Note: This is a general industry recommendation. Always verify exact storage conditions with the supplier Certificate of Analysis (COA).]

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1 Exposure controls**

#### **8.1.1 Occupational exposure limits (OEL)**

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

#### **8.1.2 Appropriate engineering controls**

Use only in a chemical fume hood or with local exhaust ventilation.

Ensure adequate ventilation to keep airborne concentrations below exposure limits.

### **8.2 Individual protection measures**

#### **8.2.1 Eye/face protection**

Wear chemical safety goggles.

#### **8.2.2 Skin protection**

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

### 8.2.3 Respiratory protection

Use NIOSH-approved dust/mist respirator (N95 or higher) if ventilation is inadequate.

### 8.2.4 Thermal hazards

Not applicable.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- a) Appearance: Ampicillin trihydrate is an odorless white microcrystalline powder with a bitter taste. A 0.25% solution in water has a pH of 3.5 to 5.5. (NTP, 1992)
- b) Odor: No data available
- c) Odor threshold: No data available
- d) pH: No data available
- e) Melting point/freezing point: 388 to 392 °F (decomposes) (NTP, 1992)
- f) Initial boiling point and boiling range: No data available
- g) Flash point: No data available
- h) Evaporation rate: No data available
- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability or explosive limits: No data available
- k) Vapor pressure: No data available
- l) Vapor density: No data available
- m) Relative density: No data available
- n) Water solubility: 1 to 10 mg/mL at 70 °F (NTP, 1992)
- o) Partition coefficient: n-octanol/water: Log P: No data available
- p) Auto-ignition temperature: No data available
- q) Decomposition temperature: No data available
- r) Viscosity: No data available
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

### 9.2 Other information

Topological Polar Surface Area (TPSA): 141 Å<sup>2</sup>

Complexity: 562

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

#### 10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

Avoid strong oxidizing agents, strong acids, and strong bases.

#### 10.5 Incompatible materials

Strong oxidizing agents, strong acids, strong bases.

#### 10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NO<sub>x</sub>), Sulfur oxides (SO<sub>x</sub>).

See also Section 5 (Fire-fighting measures) for combustion products.

### 11. TOXICOLOGICAL INFORMATION

#### 11.1 Information on toxicological effects

##### Acute toxicity:

No acute toxicity data available.

##### Skin corrosion/irritation:

Causes skin irritation (H315).

##### Serious eye damage/eye irritation:

Causes serious eye irritation (H319).

##### Respiratory or skin sensitization:

May cause allergy or asthma symptoms or breathing difficulties if inhaled (H334).

##### Germ cell mutagenicity:

No data available.

##### Carcinogenicity:

No data available.

##### Reproductive toxicity:

No data available.

##### Specific target organ toxicity (single exposure):

No data available.

##### Specific target organ toxicity (repeated exposure):

No data available.

##### Aspiration hazard:

No data available.

#### 11.2 Additional information

##### Carcinogen classification:

Ampicillin Trihydrate

TR-318: Toxicology and Carcinogenesis Studies of Ampicillin Trihydrate (CASRN 7177-48-2) in F344/N Rats and B6C3F1 Mice (Gavage Studies) (1987 )

12/09/85

Equivocal Evidence

No Evidence

No Evidence

No Evidence

Under the conditions of these 2-year gavage studies, there was equivocal evidence of carcinogenicity of ampicillin trihydrate for male F344/N rats as shown by increased incidences of pheochromocytomas of the adrenal medulla and by marginally increased incidences of mo

Data source: Hazardous Substances Data Bank (HSDB) via PubChem.

## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

No ecotoxicity data available.

### **12.2 Persistence and degradability**

No data available.

### **12.3 Bioaccumulative potential**

No data available.

### **12.4 Mobility in soil**

No data available.

### **12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available.

### **12.6 Other adverse effects**

No other adverse ecological effects identified.

## **13. DISPOSAL CONSIDERATIONS**

### **13.1 Waste treatment methods**

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

## **14. TRANSPORT INFORMATION**

### **14.1 UN number**

Not regulated as dangerous goods (research quantities typically exempt).

### **14.2 UN proper shipping name**

Not subject to transport regulations (small quantities for research use).

### **14.3 Transport hazard class(es)**

Not classified as dangerous goods for transport (research quantities).

### **14.4 Packing group**

Not applicable (not regulated as dangerous goods in typical research quantities).

### **14.5 Environmental hazards**

Marine pollutant: No (not classified as environmentally hazardous per GHS).

#### **14.6 Special precautions for user**

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

#### **14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable.

### **15. REGULATORY INFORMATION**

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

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Not available in public databases.

##### **SARA 302 Components:**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

##### **SARA 313 Components:**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

##### **SARA 311/312 Hazards:**

Acute (short-term) health hazard

##### **Massachusetts Right To Know Components:**

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

##### **Pennsylvania Right To Know Components:**

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

##### **New Jersey Right To Know Components:**

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

##### **California Prop. 65 Components:**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

#### **15.2 Chemical safety assessment**

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

### **16. OTHER INFORMATION**

Revision Date: 2026/09/09

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product.

Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.