Section 1 - Product and Company Information

Product Name: AMPICILLIN SODIUM SALT
Product Number: A9518
Brand: SIAL
Company: Sigma-Aldrich Canada, Ltd
Address: 2149 Winston Park Drive
Oakville ON L6H 6J8 CA
Technical Phone: 9058299500
Fax: 9058299292
Emergency Phone: 800-424-9300

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMPICILLIN SODIUM</td>
<td>69-52-3</td>
<td>No</td>
</tr>
</tbody>
</table>

Formula: C16H18N3NaO4S
Synonyms:
- Alpen-N * Amcill-S *
- D(-)-alpha-Aminobenzylpenicillin sodium salt *
- Ampicillin sodium * Ampicillin sodium salt *
- Binotal sodium * Citteral * Domicillin *
- Omnipen-N * PEN A/N * Penbritin-S * Penialmen *
- Polycillin-N * Principen/N * Sodium
- D(-)-alpha-aminobenzylpenicillin * Sodium ampicillin * Sodium binotal * Sodium P-50

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Irritant.
May cause sensitization by inhalation and skin contact.

HMIS RATING
- HEALTH: 3*
- FLAMMABILITY: 0
- REACTIVITY: 1

NFPA RATING
- HEALTH: 3
- FLAMMABILITY: 0
- REACTIVITY: 1

*additional chronic hazards present.

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 skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

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

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed. Store at: 0-4°C Store at 2-8°C

SPECIAL REQUIREMENTS
Hygroscopic.

Section 8 - Exposure Controls / PPE
ENGINEERING CONTROLS
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). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.
Other: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Physical State: Solid</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Slightly yellow</td>
<td></td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>371.39 AMU</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>BP/BP Range</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>215 °C</td>
<td></td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
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<td></td>
</tr>
<tr>
<td>Saturated Vapor Conc.</td>
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</tr>
<tr>
<td>SG/Density</td>
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<td></td>
</tr>
<tr>
<td>Bulk Density</td>
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<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
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<td></td>
</tr>
<tr>
<td>Volatile%</td>
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<td></td>
</tr>
<tr>
<td>VOC Content</td>
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<td></td>
</tr>
<tr>
<td>Water Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Solvent Content</td>
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<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
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<td></td>
</tr>
<tr>
<td>Viscosity</td>
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<td></td>
</tr>
<tr>
<td>Surface Tension</td>
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<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
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<td></td>
</tr>
<tr>
<td>Decomposition Temp.</td>
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<td></td>
</tr>
<tr>
<td>Flash Point</td>
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<td></td>
</tr>
<tr>
<td>Explosion Limits</td>
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<td></td>
</tr>
<tr>
<td>Flammability</td>
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<td></td>
</tr>
<tr>
<td>Autoignition Temp</td>
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<td></td>
</tr>
<tr>
<td>Refractive Index</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Optical Rotation</td>
<td>Degree of Rotation: 20 °C 2 g/l Solvent: H2O +255 (+-5)</td>
<td></td>
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<tr>
<td>Miscellaneous Data</td>
<td>N/A</td>
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<tr>
<td>Solubility</td>
<td>Solubility in Water: 50 mg/ml H2O clear, very faintly yellow</td>
<td></td>
</tr>
</tbody>
</table>

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.
Conditions to Avoid: Moisture.
Materials to Avoid: Oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides.

HAZARDOUS POLYMERIZATION
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 the 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.

SENSITIZATION
Sensitization: There are reports of serious and sometimes fatal hypersensitivity (anaphylactic) reactions occurring in people receiving penicillin therapy by the parenteral route although it has also occurred via oral administration. These reactions usually occur in individuals who have a history of sensitivity to multiple allergens, asthma, hay fever or urticaria. Ingestion has resulted in nausea, vomiting, diarrhea, glossitis, stomatitis, enterocolitis, pseudomembranous colitis. Hypersensitivity reactions: erythematous maculopapular rashes, erythema multiforme, urticaria and exfoliative dermatis. Respiratory: May cause allergic respiratory reaction. Skin: May cause allergic skin reaction.

SIGNS AND SYMPTOMS OF EXPOSURE
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral
- Rat
  - > 5314 mg/kg
  - LD50

Intraperitoneal
- Rat
  - 7400 MG/KG
  - LD50

Subcutaneous
- Rat
  - >5314 MG/KG
  - LD50

Oral
- Mouse
  - > 5314 mg/kg
  - LD50

Intraperitoneal
- Mouse
  - 5700 MG/KG
LD50
Subcutaneous Mouse
>5314 MG/KG
LD50

CHRONIC EXPOSURE - CARCINOGEN
Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC CARCINOGEN LIST
Rating: Group 3
Rating: Group 3

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. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. 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 non-hazardous for transport.

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

Section 15 - Regulatory Information
EU ADDITIONAL CLASSIFICATION
Symbol of Danger: Xi
Indication of Danger: Irritant.
R: 42/43
Risk Statements: May cause sensitization by inhalation and skin contact.
S: 22-36/37-45
Safety Statements: Do not breathe dust. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Irritant.
Risk Statements: May cause sensitization by inhalation and skin contact.
Safety Statements: Do not breathe dust. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
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 CPR, and the MSDS contains all the information required by the CPR.
DSL: No
NDSL: No

Section 16 - Other Information

DISCLAIMER
For R&D 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 any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.
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