1. PRODUCT AND COMPANY INFORMATION

Distributed By: WG Critical Care, LLC.
120 Route 17 North
Suite 115
Paramus, NJ 07652 USA

Product Name: Piperacillin and Tazobactam for Injection

Active Ingredient/Primary Component: Piperacillin and Tazobactam for Injection

**Piperacillin Sodium**

(1) 4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 6-[[[[4-ethyl-2,3-dioxo-1-piperazinyl]carbonyl]amino]phenylacetyl]amino]-3,3-dimethyl-7-oxo-, monosodium salt, [2S-[2a,5a,6b(5*)]]; (2) Sodium (2S,5R,6R)-6-[(R)-2-(4-ethyl-2,3-dioxo-1-piperazinecarboxamido)-2-phenylacetamido]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate

**Tazobactam Sodium**

(1) 4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 3-methyl-7-oxo-3-(1H-1,2,3-triazol-1-ylmethyl)-, 4,4-dioxide, sodium salt, [2S-(2α,3β,5α)]; (2) Sodium (2S,3S,5R)-3-methyl-7-oxo-3-(1H-1,2,3-triazol-1-ylmethyl)-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate, 4,4-dioxide

**Molecular Formula:**

**Piperacillin Sodium**

C_{23}H_{26}N_{5}NaO_{7} MW: 539.54

**Tazobactam Sodium**

C_{10}H_{11}N_{4}NaO_{3}S MW: 322.27
1. PRODUCT AND COMPANY INFORMATION (CONT.)

<table>
<thead>
<tr>
<th>UNII Code:</th>
<th>Piperacillin Sodium</th>
<th>Tazobactam Sodium</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNII:</td>
<td>M98T69Q7HP</td>
<td>UXA545ABTT</td>
</tr>
<tr>
<td>CAS Number:</td>
<td>59703-84-3</td>
<td>89785-84-2</td>
</tr>
<tr>
<td>Chemical Family:</td>
<td>Piperacillin Sodium</td>
<td>Tazobactam Sodium</td>
</tr>
<tr>
<td></td>
<td>Antibacterial</td>
<td>Inhibitor (β-lactamase)</td>
</tr>
</tbody>
</table>

Product Use: Pharmaceutical
Product Type: Prescription Drug
Container Information: Vials

Customer Service Phone Number: +1-888-493-0861
Emergency Phone Number: +1-866-562-4708 (Prosar)

2. HAZARDS IDENTIFICATION

PRIMARY PHYSICAL AND HEALTH HAZARDS:
May cause respiratory tract, eye, and skin irritation. May cause respiratory and skin reaction

ROUTES OF ENTRY:
Inhalation, injection, eye/skin contact and/or ingestion

SIGNS & SYMPTOMS OF EXPOSURE:
May cause sensitization by inhalation and skin contact. Irritate respiratory system, and skin. May cause allergic reaction in sensitive individuals.

Hypersensitivity (anaphylactic/anaphylactoid) reactions (including anaphylactic shock) have been reported in patients receiving therapy with penicillin. Individuals with a history of penicillin hypersensitivity or a history of sensitivity to multiple allergens should avoid contact. The most common effects may include diarrhea, headache, constipation, nausea, vomiting, dyspepsia, pruritus, stool changes, fever, abdominal pain, chest pain, edema, anxiety, rhinitis, and dyspnea.

CHEMICAL LISTED AS CARCINOGEN:
NTP: NO IARC: NO OSHA: NO
3. COMPOSITION INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Weight %</th>
<th>CAS No.</th>
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<tbody>
<tr>
<td>Piperacillin Sodium, USP</td>
<td>80-88%</td>
<td>59703-84-3</td>
</tr>
<tr>
<td>Tazobactam Sodium</td>
<td>12-20%</td>
<td>89785-84-2</td>
</tr>
<tr>
<td>Sodium Bicarbonate, USP</td>
<td>2.5-5%</td>
<td>144-55-8</td>
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</tbody>
</table>

4. FIRST AID MEASURES

**EYE EXPOSURE:** Immediately rinse eyes with plenty of water for at least 15 minutes. Keep eye wide open while rinsing. Seek medical advice.

**SKIN EXPOSURE:** Remove contaminated clothing immediately. Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention if skin reaction occurs.

**INGESTION:** Never attempt to induce vomiting. Flush mouth out with water immediately. Seek medical attention.

**INHALATION:** Use appropriate personal protective equipment. Move to fresh air and monitor breathing. If breathing becomes difficult, maintain ventilation, give oxygen as appropriate, and seek medical attention.

**NOTE TO PHYSICIAN:** See patient package insert in shipping carton for complete information.
5. FIRE FIGHTING MEASURES

**FLASH POINT:** Not Established

**AUTO-IGNITION TEMPERATURE:** Not Established

**FLAMMABLE LIMITS IN AIR:**
- Lower %: Not Established
- Upper %: Not Established

**FLAMMABLE LIMITS:** Not Established

**EXTINGUISHING MEDIA:** Use alcohol resistant foam, carbon dioxide, dry chemical, or water fog or spray when fighting fires involving this material. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**UNUSUAL FIRE / EXPLOSION HAZARDS:** Thermal decomposition products may include smoke and toxic fumes. Oxides of carbon, oxides of nitrogen, and other organic substances may be formed. Other undetermined low molecular weight hydrocarbon compounds may be released in small quantities depending upon specific conditions of combustion.

6. ACCIDENTAL RELEASE MEASURE

**SPILL:** Contain and collect spillage and place in container for disposal according to local regulations (See Section 13). Wipe surface area clean with soap and water. Avoid contact with strong oxidizing agents.

**RELEASE TO AIR:** Prevent release to drains and waterways. Prevent release to the environment.

**RELEASE TO WATER:** Refer to local water authority. Drain disposal is not recommended; refer to local, state, and federal disposal guidelines.
7. HANDLING AND STORAGE

**GENERAL HANDLING:** When handling pharmaceutical products, avoid all contact and inhalation of dust, fumes, mist, and/or vapors associated with the product. Keep away from sources of ignition.

**STORAGE CONDITIONS:** Store at controlled room temperature between 20° – 25°C in the original packaging.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**RESPIRATORY PROTECTION:** If respiratory protection is used, the type of protection will depend upon air concentration present, required protection factor as well as hazards, physical properties of substance.

**EYE PROTECTION:** Safety glasses with side shields or goggles are recommended.

**VENTILATION** General room ventilation is usually satisfactory. Use local exhaust ventilation if necessary.

**SKIN PROTECTION:** Protect with disposable garments if direct skin contact is anticipated.

**OTHER PROTECTIVE EQUIPMENT:** Chemical resistant gloves.

**ADDITIONAL EXPOSURE PRECAUTIONS:** Wash hands and face before breaks and immediately after handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>PHYSICAL STATE:</th>
<th>Cryodessicated Powder</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPEARANCE AND ODOR:</td>
<td>White to off white</td>
</tr>
<tr>
<td>BOILING POINT:</td>
<td>Not Available</td>
</tr>
<tr>
<td>VAPOR PRESSURE:</td>
<td>Not Available</td>
</tr>
<tr>
<td>VAPOR DENSITY:</td>
<td>Not Available</td>
</tr>
<tr>
<td>Percent Volatile:</td>
<td>5%</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY:</td>
<td>H 0.6 (BULK)</td>
</tr>
<tr>
<td>EVAPORATION RATE:</td>
<td>Not Available</td>
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<tr>
<td>MELTING POINT:</td>
<td>205° C</td>
</tr>
<tr>
<td>SOLUBILITY:</td>
<td>Soluble in dimethylformamide</td>
</tr>
<tr>
<td>pH:</td>
<td>5.0-7.0 (1g Piperacillin Sodium / 5ml Solution)</td>
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<tr>
<td>Explosive Properties:</td>
<td>Not Available</td>
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</table>
10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions

INCOMPATIBILITY: Not Available
(MATERIALS TO AVOID)

HAZARDOUS POLYMERIZATION: No hazardous polymerizations

HAZARDOUS DECOMPOSITION: Decomposition products of this compound may include potentially hazardous byproducts, acrid and toxic fumes.

CONDITIONS TO AVOID: No conditions contributing to instability are known to exist. Avoid contact with strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>TYPE</th>
<th>ROUTE</th>
<th>SPECIES</th>
<th>DOSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piperacillin Sodium</td>
<td>LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>Oral</td>
<td>Rat</td>
<td>10g/kg</td>
</tr>
<tr>
<td>Piperacillin Sodium</td>
<td>LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>Intraperitoneal</td>
<td>Rat</td>
<td>7600 mg/kg</td>
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<tr>
<td>Piperacillin Sodium</td>
<td>LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>Subcutaneous</td>
<td>Rat</td>
<td>8800 mg/kg</td>
</tr>
<tr>
<td>Tazobactam Sodium</td>
<td>LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>Oral</td>
<td>Mice</td>
<td>5000mg/kg</td>
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<tr>
<td>Sodium Bicarbonate</td>
<td>LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>Oral</td>
<td>Mice</td>
<td>3360mg/kg</td>
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</tbody>
</table>

*Occasionally hypersensitivity reactions have been reported in patients on penicillin therapy. These reactions are more likely to occur in individuals with a history of penicillin hypersensitivity and / or a history of sensitivity to multiple allergens.

12. ECOLOGICAL INFORMATION

No applicable information found.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Dispose of any cleanup materials and waste residue according to all applicable laws and regulations.
14. TRANSPORT INFORMATION

REGULATORY ORGANIZATIONS:
DOT: Not Regulated
ICAO / IATA: Not Regulated
IMO: Not Regulated

15. REGULATORY INFORMATION

Below is selected regulatory information chosen primarily for possible WG Critical Care use. This section is not a complete analysis or reference to all applicable regulatory information. Please consider all applicable laws and regulations for your city / state / country.

US Regulations
TSCA – No
CERCLA-No
SARA 313 – No
OSHA Substance Specific - No

16. OTHER INFORMATION

As of the date of issuance, we are providing available information relevant to the handling of this material in the workplace. All information contained herein is offered with the good faith belief that it is accurate. THIS SAFETY DATA SHEET SHALL NOT BE DEEMED TO CREATE ANY WARRANTY OF ANY KIND (INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE). In the event of an adverse incident associated with this material, this safety data sheet is not intended to be a substitute for consultation with appropriately trained personnel. Nor is this safety data sheet intended to be a substitute for product literature which may accompany the finished product.