Product Name: Vecuronium Bromide for Injection

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Manufacturer Name: Hospira, Inc.
And Address: 275 North Field Drive
Lake Forest, Illinois 60045

Emergency Telephone: CHEMTREC: 800 424-9300
Hospira, Inc.: 224 212-2055

Product Name: Vecuronium Bromide for Injection
Synonyms: None

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>Chemical Formula</th>
<th>Approximate Percent by Weight</th>
<th>CAS Number</th>
<th>RTECS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vecuronium Bromide</td>
<td>C₃₄H₅₇BrN₂O₄</td>
<td>7</td>
<td>500700-72-6</td>
<td>WC4500000</td>
</tr>
<tr>
<td>Sodium Phosphate, Dibasic</td>
<td></td>
<td>11</td>
<td>7558-79-4</td>
<td>N/A</td>
</tr>
<tr>
<td>Citric Acid</td>
<td></td>
<td>14</td>
<td>77-92-9</td>
<td>GE7350000</td>
</tr>
<tr>
<td>Mannitol</td>
<td></td>
<td>67</td>
<td>69-65-8</td>
<td>N/A</td>
</tr>
</tbody>
</table>

3. HAZARD INFORMATION

Emergency Overview: In clinical use, this material is used as a skeletal muscle relaxant. Possible target organs include the skeletal muscle, the parasympathetic nervous system and the respiratory system.

Occupational Exposure Potential: Information on the absorption of this compound via ingestion, inhalation or skin contact is not available. Avoid liquid aerosol generation and skin contact.

Signs and Symptoms: No signs or symptoms from occupational exposure are known. Clinical data suggest the following: muscle weakness, breathing difficulty, itching, redness, bronchospasm, decreased blood pressure, fast heart rate, rash.

Medical Conditions Aggravated by Exposure: Hypersensitivity to the material and/or similar materials. Pre-existing ailments in the following: muscle, respiratory system, parasympathetic nervous system.
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4. FIRST AID MEASURES

Eye Contact: Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

Skin Contact: Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

Inhalation: Remove from source of exposure. If signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

Ingestion: Remove from source of exposure. If signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

5. FIRE FIGHTING MEASURES

Flammability: Non-flammable
Fire & Explosion None
Hazard: 
Extinguishing Media: Use extinguishing media appropriate for primary cause of fire.
Special Fire Fighting Procedures No special provisions required beyond normal fire fighting equipment such as flame and chemical resistant clothing and self contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Spill Cleanup and Disposal Absorb with suitable material and clean affected area with soap and water. Dispose of materials according to the applicable federal, state, or local regulations.

7. HANDLING AND STORAGE

Handling Protect from light by retaining in carton until contents have been used.
Storage No special storage required for hazard control. For product protection store at controlled room temperature of 15-30°C (59-86°F).
Special Precautions Protect from freezing, light and extreme heat.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>OSHA-PEL</th>
<th>ACGIH-TLV</th>
<th>Hospira EEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mannitol</td>
<td>8 hr TWA: Not</td>
<td>8 hr TWA: Not</td>
<td>8 hr TWA: Not</td>
</tr>
<tr>
<td></td>
<td>Established</td>
<td>Established</td>
<td>Established</td>
</tr>
<tr>
<td>Vecuronium Bromide</td>
<td>8 hr TWA: Not</td>
<td>8 hr TWA: Not</td>
<td>8 hr TWA: 5 mcg/m3</td>
</tr>
<tr>
<td></td>
<td>Established</td>
<td>Established</td>
<td>STEL: 20 mcg/m3</td>
</tr>
<tr>
<td>Sodium Phosphate, Dibasic</td>
<td>8 hr TWA: Not</td>
<td>8 hr TWA: Not</td>
<td>8 hr TWA: Not</td>
</tr>
<tr>
<td></td>
<td>Established</td>
<td>Established</td>
<td>Established</td>
</tr>
<tr>
<td>Citric Acid</td>
<td>8 hr TWA: Not</td>
<td>8 hr TWA: Not</td>
<td>8 hr TWA: Not</td>
</tr>
<tr>
<td></td>
<td>Established</td>
<td>Established</td>
<td>Established</td>
</tr>
</tbody>
</table>

Notes:
- OSHA PEL: US Occupational Safety and Health Administration – Permissible Exposure Limit
- ACGIH TLV: American Conference of Governmental Industrial Hygienists – Threshold Limit Value.
- EEL: Employee Exposure Limit.
- TWA: 8 hour Time Weighted Average.
- STEL: 15-minute Short Term Exposure Limit.
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Respiratory Protection
Respiratory protection is not needed during normal product use.

Skin Protection
If solution contact with unprotected skin is likely, use of impervious gloves is a prudent practice.

Eye Protection
Eye protection is not required during expected product use conditions but may be warranted should a splash potential exist.

Engineering Controls
Engineering controls are not needed during normal product use conditions.

9. PHYSICAL/CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance/Physical State</td>
<td>Fine crystalline powder</td>
</tr>
<tr>
<td>Odor</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>227-229°C (Melting Point)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Vapor Density (Air=1)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Solubility</td>
<td>Water</td>
</tr>
<tr>
<td>pH</td>
<td>3.3 – 4.5</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Chemical Stability
Stable under standard use and storage conditions.

Incompatibilities
Not Determined

Hazardous
Toxic fumes of nitrogen oxides and Br.

Decomposition Products
Not Determined.

Polymerization
Not Determined.

11. TOXICOLOGICAL INFORMATION:

Acute Toxicity – Oral:

<table>
<thead>
<tr>
<th>Ingredient(s)</th>
<th>Percent</th>
<th>Test Type</th>
<th>Value</th>
<th>Units</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vecuronium Bromide</td>
<td>100</td>
<td>LD50</td>
<td>41</td>
<td>mg/kg</td>
<td>Rats, Mice</td>
</tr>
<tr>
<td>Sodium Phosphate, Dibasic</td>
<td>100</td>
<td>LD50</td>
<td>17,000</td>
<td>mg/kg</td>
<td>Rats</td>
</tr>
<tr>
<td>Citric Acid</td>
<td>100</td>
<td>LD50</td>
<td>3000</td>
<td>mg/kg</td>
<td>Animals</td>
</tr>
<tr>
<td>Mannitol</td>
<td>100</td>
<td>LD50</td>
<td>13,500-22,000</td>
<td>mg/kg</td>
<td>Rats, Mice</td>
</tr>
</tbody>
</table>

LD50 is the dosage producing 50% mortality.
Product contains approximately 7% Vecuronium Bromide.

Mutagenicity
Not Determined

Target Organ Effects
In clinical use target organ effects include muscle, the parasympathetic nervous system and the respiratory system.
Product Name: Vecuronium Bromide for Injection

12. ECOLOGICAL INFORMATION:

Aquatic Toxicity Not Available

13. DISPOSAL CONSIDERATIONS:

Waste Disposal Disposal should be performed in accordance with the federal, state or local regulatory requirements.

Container Handling and Disposal Dispose of container and unused contents in accordance with federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

DOT Not Regulated

Notes: DOT - US Department of Transportation Regulations

15. REGULATORY INFORMATION

TSCA Status Not Regulated
CERCLA Status Not Regulated
SARA Status Not Regulated
RCRA Status Not Regulated
PROP 65 (Calif.) Not Regulated

Notes: TSCA Toxic Substance Control Act
CERCLA, US EPA law, Comprehensive Environmental Response, Compensation, and Liability Act
SARA Superfund Amendments and Reauthorization Act
RCRA US EPA, Resource Conservation and Recovery Act
Prop 65, California Proposition 65

16. OTHER INFORMATION:

MSDS Coordinator Global Occupational Toxicology
Date Prepared September 15, 2005
Date Revised October 21, 2008

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