MATERIAL SAFETY DATA SHEET

Product Name:  Metronidazole Injection, USP

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

<table>
<thead>
<tr>
<th>Manufacturer Name</th>
<th>Hospira, Inc.</th>
</tr>
</thead>
</table>
| And Address       | 275 North Field Drive  
|                   | Lake Forest, Illinois  60045  
|                   | USA |
| Emergency Telephone | CHEMTREC:  800 424-9300  
| Hospira, Inc. | 224 212-2055 |
| Product Name      | Metronidazole Injection, USP |
| Synonyms          | None |

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>Metronidazole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Formula</td>
<td>C₆H₉N₃O₃</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Approximate Percent by Weight</th>
<th>CAS Number</th>
<th>RTECS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metronidazole</td>
<td>0.05</td>
<td>443-48-1</td>
<td>N15600000</td>
</tr>
<tr>
<td>Water</td>
<td>99</td>
<td>7732-18-5</td>
<td>ZC0110000</td>
</tr>
</tbody>
</table>

3. HAZARD INFORMATION

Emergency Overview: In clinical use, this material is used to treat bacterial and protozoal infections. Possible target organs include the nervous system, reproductive system, liver, lungs, and gastrointestinal 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: seizures, numbness, tingling in the extremities, headaches, anorexia, vomiting, diarrhea, constipation, furry tongue, thrombocytopenia, palpitation, dizziness, ataxia, rash, painful urination.

Medical Conditions Aggravated by Exposure: Data suggest any preexisting ailments in the following organs: nervous system, hematopoietic system, liver, gastrointestinal system. Concurrent intake of depressants like alcohol. Concurrent use of medications.
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 Hazard:** None

**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 ready to use.

**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>Metronidazole</td>
<td>8 hr TWA: Not</td>
<td>8 hr TWA: Not</td>
<td>8 hr TWA: 200 mcg/m3</td>
</tr>
<tr>
<td></td>
<td>Established</td>
<td>Established</td>
<td>STEL: Not 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.
Product Name: Metronidazole Injection, USP

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>Clear liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Approximately that of water (100 °C, 212 °F)</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Approximately that of water (0 °C, 32 °F)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not Applicable</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>Approximately that of water (1.0)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Approximately that of water (1.0)</td>
</tr>
<tr>
<td>Solubility</td>
<td>Aqueous solution</td>
</tr>
<tr>
<td>pH</td>
<td>4.5-7.0</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

Decomposition Products
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>Metronidazole</td>
<td>100</td>
<td>LD50</td>
<td>3000- &gt;5000</td>
<td>mg/kg</td>
<td>Mice, Rats</td>
</tr>
</tbody>
</table>

LD50 is the dosage producing 50% mortality.
Product contains approximately 0.5% Metronidazole.

Mutagenicity
Not Determined

Target Organ Effects
In clinical use target organ effects include gastrointestinal tract, nervous system, liver, lungs, male reproductive system.
Product Name: Metronidazole Injection, USP

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.)  Metronidazole is identified in the state of California to cause reproductive toxicity.

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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