MATERIAL SAFETY DATA SHEET

Product Name: Midazolam Hydrochloride Injection

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Manufacturer Name
Hospira, Inc.

Address
275 North Field Drive
Lake Forest, Illinois 60045
USA

Note: Hospira, formerly the Hospital Products Division of Abbott Laboratories, was created as an independent company in May 2004.

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

Product Name
Midazolam Hydrochloride Injection, USP

Synonyms
None

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name
Midazolam Hydrochloride

Chemical Formula
C_{18}H_{14}Cl_{2}FN_{3}

<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>Midazolam Hydrochloride</td>
<td>0.1-0.5</td>
<td>59467-96-8</td>
<td>N/A</td>
</tr>
<tr>
<td>Benzyl Alcohol</td>
<td>1</td>
<td>100-51-6</td>
<td>DN3150000</td>
</tr>
<tr>
<td>Water</td>
<td>98</td>
<td>7732-18-5</td>
<td>ZC0110000</td>
</tr>
</tbody>
</table>

3. HAZARD INFORMATION

Emergency Overview
In clinical use, this material is used as a sedative. Possible target organs include the central nervous system, skin, fetus, and gastrointestinal tract.

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: sedation, sleep, cognitive dysfunction, incoordination, coma, rash, visual impairment.

Medical Conditions Aggravated by Exposure
Data suggest any preexisting ailments in the following organs: skin, central nervous system, liver, kidney, eyes, gastrointestinal system. Concurrent intake of depressants like alcohol. Concurrent use of medications.
Product Name: Midazolam Hydrochloride Injection

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: No special handling required.

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 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>Midazolam Hydrochloride</td>
<td>8 hr TWA: Not Established</td>
<td>8 hr TWA: Not Established</td>
<td>8 hr TWA: 2 mcg/m3 STEL: Not Established</td>
</tr>
<tr>
<td>Benzyl Alcohol</td>
<td>8 hr TWA: Not Established</td>
<td>8 hr TWA: Not Established</td>
<td>8 hr TWA: 44.2 mg/m3 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.

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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>Clear, colorless to slight yellow solution</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>Water</td>
</tr>
<tr>
<td>pH</td>
<td>2.5-4.2</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Chemical Stability
Stable under standard use and storage conditions.

Incompatibilities
Not Determined

Hazardous 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>Midazolam Hydrochloride</td>
<td>100</td>
<td>LD50</td>
<td>1600</td>
<td>mg/kg</td>
<td>Rats</td>
</tr>
<tr>
<td>Benzyl Alcohol</td>
<td>100</td>
<td>LD50</td>
<td>1040-3100</td>
<td>mg/kg</td>
<td>Animals</td>
</tr>
</tbody>
</table>

LD50 is the dosage producing 50% mortality. Product contains between approximately 0.1-0.5% Midazolam.

Acute Toxicity – Dermal:

<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>Benzyl Alcohol</td>
<td>100</td>
<td>LD50(sc)</td>
<td>2000</td>
<td>mg/kg</td>
<td>Rabbits</td>
</tr>
</tbody>
</table>

LD50 (sc) is the value for skin contact.

Acute Toxicity – Inhalation:

<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>Benzyl Alcohol</td>
<td>100</td>
<td>LC50</td>
<td>2000</td>
<td>ppm</td>
<td>Rats</td>
</tr>
</tbody>
</table>

LC50 is the concentration in air that produces 50% mortality.
Product Name: Midazolam Hydrochloride Injection

Mutagenicity  
Negative in the Ames test, Mutagenic in Micronucleus assay.

Target Organ Effects  
In clinical use target organ effects include gastrointestinal tract, central nervous system, skin, and eyes.

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.)  
Midazolam Hydrochloride 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  
T. Straits  MPH, CIH

Date Prepared  
September 15, 2005

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