1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Manufacturer Name  Hospira, Inc.
And 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  Ketamine Hydrochloride Injection, USP
Synonyms  None

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name  Ketamine Hydrochloride
Chemical Formula  C_{13}H_{17}Cl_{2}NO

<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>Ketamine Hydrochloride</td>
<td>5 - 10</td>
<td>1867-66-9</td>
<td>GW1400000</td>
</tr>
<tr>
<td>Water</td>
<td>90 - 95</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 non-barbiturate anesthetic. Possible target organs include the central nervous system, skin, eyes, respiratory tract, gastrointestinal tract and possibly the fetus.

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: incoordination, increased blood pressure, confusion, psychiatric changes, fast heart rate, gastrointestinal upset.

Medical Conditions Aggravated by Exposure  Hypersensitivity to the material and/or similar materials. Pre-existing ailments in the following organs: eyes, skin, gastrointestinal system, cardiovascular system, respiratory system.
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 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

<table>
<thead>
<tr>
<th>Exposure Guidelines</th>
<th><strong>Exposure limits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Component</strong></td>
<td><strong>OSHA-PEL</strong></td>
</tr>
<tr>
<td>Ketamine Hydrochloride</td>
<td>8 hr TWA: 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.
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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 slightly yellow solution</td>
</tr>
<tr>
<td>Odor</td>
<td>Not Determined</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>Approximately that of water (17.5 mm Hg at 20 °C).</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>Approximately that of water (1.0)</td>
</tr>
<tr>
<td>Solubility</td>
<td>Water</td>
</tr>
<tr>
<td>pH</td>
<td>3.5 – 5.5</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Chemical Stability
Stable under standard use and storage conditions.

Incompatibilities
Not Determined

Hazardous Decomposition
Toxic fumes of Cl-, HCl, and nitrogen oxides

Products

Hazardous 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>Ketamine Hydrochloride</td>
<td>100</td>
<td>LD50</td>
<td>447-670</td>
<td>mg/kg</td>
<td>Rats Mice</td>
</tr>
</tbody>
</table>

LD50 is the dosage producing 50% mortality.
Product contains between approximately 5-10% Ketamine Hydrochloride.

Mutagenicity
Not Determined

Target Organ Effects
In clinical use target organ effects include the central nervous system, cardiovascular system.
Product Name: Ketamine Hydrochloride 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.) 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 T. Straits MPH, CIH
Date Prepared September 15, 2005

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