MATERIAL SAFETY DATA SHEET

Product Name: Tromethamine Injection (THAM® Solution)

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

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

Product Name: Tromethamine Injection (THAM® Solution)
Synonyms: THAM® Solution

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name: Tromethamine
Chemical Formula: C₄H₁₁NO₃

<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>Tromethamine</td>
<td>3.6</td>
<td>77-86-1</td>
<td>TY2900000</td>
</tr>
<tr>
<td>Water</td>
<td>96</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 correct metabolic acidosis. Possible target organs include the kidneys, skin and eyes.

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: low blood potassium, hypoglycemia, respiratory depression.

Medical Conditions Aggravated by Exposure: Hypersensitivity to the material and/or similar materials. Pre-existing ailments in the following organs: eyes, skin, kidney, respiratory system.
Product Name: Tromethamine Injection (THAM® Solution)

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OSHA-PEL</td>
</tr>
<tr>
<td>Tromethamine</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.
Product Name: Tromethamine Injection (THAM® Solution)

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>Appearance/Physical</th>
<th>Clear solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td></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>Not Applicable</td>
</tr>
<tr>
<td>Vapor Density (Air=1)</td>
<td>Approximately that of water (17.5 mm Hg at 20 °C).</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>1.0111 at 25 °C</td>
</tr>
<tr>
<td>Solubility</td>
<td>Water</td>
</tr>
<tr>
<td>pH</td>
<td>8.4 – 8.7</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Chemical Stability
Stable under standard use and storage conditions.

Incompatibilities
None

Hazardous
Toxic fumes of nitrogen oxides.

Decomposition
Products
Not Determined.

Polymerization

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>Tromethamine</td>
<td>100</td>
<td>LD50</td>
<td>5900</td>
<td>mg/kg</td>
<td>Rats</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1000</td>
<td></td>
<td>Rabbits</td>
</tr>
</tbody>
</table>

LD50 is dosage producing 50% mortality.
Product contains approximately 3.6% Tromethamine.

Mutagenicity
Not Determined

Target Organ Effects
In clinical use target organ effects include parasympathetic nervous system, the cardiovascular system, and gastrointestinal tract.
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### 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**  
Tromethamine is listed on the TSCA inventory

**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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