MATERIAL SAFETY DATA SHEET

Product Name: Sodium Chloride Injection, Concentrate

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

| Manufacturer Name And Address | Hospira Inc.  
| Address | 275 North Field Drive  
| | Lake Forest, Illinois USA  
| | 60045  
| Emergency Telephone | CHEMTREC: North America: 800-424-9300;  
| | International 1-703-527-3887; Australia - 61-290372994; UK - 44-870-8200418  
| Hospira, Inc., Non-Emergency | 224-212-2000  
| Product Name | Sodium Chloride Injection, Concentrate  
| Synonyms | Table salt  

2. COMPOSITION/INFORMATION ON INGREDIENTS

| Active Ingredient Name | Sodium Chloride  
| Chemical Formula | NaCl  
| Preparation | Non-hazardous ingredients include Water for Injection. Hazardous ingredients present at less than 1% may include hydrochloric acid which is used to adjust the pH.  

<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>Sodium Chloride</td>
<td>1 ~ 24</td>
<td>7647-14-5</td>
<td>VZ4725000</td>
</tr>
</tbody>
</table>

3. HAZARD INFORMATION

<table>
<thead>
<tr>
<th>Carcinogen List</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Emergency Overview | Sodium Chloride Injection Concentrate is a solution containing sodium chloride. In clinical use, sodium chloride is used in the management of deficiencies of sodium and chloride ions in salt-losing conditions. In the workplace, concentrated sodium chloride solutions may be irritating to the eyes and respiratory tract. Possible target organs may include the eyes, cardiovascular system, gastrointestinal system and nervous system.  
| Occupational Exposure Potential | Information on the absorption of this product via 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. In the workplace, this product should be considered potentially irritating to the eyes and respiratory tract. In clinical use, gastrointestinal effects associated with acute oral ingestion of excessive amounts of sodium chloride include nausea, vomiting, diarrhea, and abdominal cramps. Excessive use of chloride salts may cause a loss of bicarbonate with an acidifying effect. Retention of excess sodium and |
accumulation of excess water may also occur and may lead to pulmonary and peripheral edema. Hyponatremia has rarely occurred with the use of saline for induction of emesis or for gastric lavage. However, hyponatremia may occur after inappropriate intravenous use of hypertonic saline. The most serious effect of hyponatremia is dehydration of the brain which causes somnolence and confusion progressing to convulsions, coma, respiratory failure, and death. Other symptoms include thirst, reduced salivation and lachrymation, fever, sweating, tachycardia, hypertension or hypotension, headache, dizziness, restlessness, irritability, weakness, and muscular twitching and rigidity.

| Medical Conditions Aggravated by Exposure | Pre-existing cardiovascular or gastrointestinal ailments. |

### 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 | None anticipated for this aqueous product. |
| Fire & Explosion Hazard | None anticipated for this aqueous product. |
| Extinguishing media | As with any fire, use extinguishing media appropriate for primary cause of fire. |
| Special Fire Fighting Procedures | No special provisions required beyond normal firefighting equipment such as flame and chemical resistant clothing and self contained breathing apparatus. |

### 6. ACCIDENTAL RELEASE MEASURES

| Spill Cleanup and Disposal | Isolate area around spill. Put on suitable protective clothing and equipment as specified by site spill procedures. Absorb the liquid with suitable material and clean affected area with soap and water. Dispose of spill materials according to the applicable federal, state, or local regulations. |

### 7. HANDLING AND STORAGE

| Handling | No special handling required under conditions of normal product use. |
| Storage | No special storage required for hazard control. For product protection, follow storage recommendations noted on the product case label, the primary |
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>Type</th>
<th>Ex. limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>Not Applicable</td>
<td>mg/m³: N/A</td>
</tr>
</tbody>
</table>

Respiratory protection

Respiratory protection is normally not needed during intended product use. However, if the generation of aerosols is likely, and engineering controls are not considered adequate to control potential airborne exposures, the use of an approved air-purifying respirator with a HEPA cartridge (N95 or equivalent) is recommended under conditions where airborne aerosol concentrations are not expected to be excessive. For uncontrolled release events, or if exposure levels are not known, provide respirators that offer a high protection factor such as a powered air purifying respirator or supplied air. A respiratory protection program that meets OSHA’s 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions require respirator use. Personnel who wear respirators should be fit tested and approved for respirator use as required.

Skin protection

If skin contact with the product formulation is likely, the use of latex or nitrile gloves is recommended.

Eye protection

Eye protection is normally not required during intended product use. However, if eye contact is likely to occur, the use of chemical safety goggles (as a minimum) is recommended.

Engineering Controls

Engineering controls are normally not needed during the normal use of this product.

9. PHYSICAL/CHEMICAL PROPERTIES

Appearance/Physical State: Liquid
Color: Clear
Odor: NA
Odor Threshold: NA
pH: 5.0 (4.5 to 7.0)
Melting point_Freezing point: NA
Initial Boiling Point/Boiling Point Range: NA
Evaporation Rate: NA
Flammability (solid, gas): NA
Upper/Lower Flammability or Explosive Limits: NA
Vapor Pressure: NA
Vapor Density: NA
Specific Gravity: NA
Solubility: Freely soluble in water; practically insoluble in dehydrated alcohol
Partition coefficient: n-octanol/water: NA
Auto-ignition temperature: NA
Decomposition temperature: NA
Product Name: Sodium Chloride Injection, Concentrate

10. STABILITY AND REACTIVITY

Reactivity  
Not determined. None anticipated from this product.

Chemical Stability  
Stable under standard use and storage conditions.

Hazardous Reactions  
Not determined

Conditions to avoid  
Not determined

Incompatibilities  
Not determined

Hazardous decomposition products  
Not determined. During thermal decomposition, it may be possible to generate irritating vapors and/or toxic fumes of hydrogen chloride and sodium oxide.

Hazardous Polymerization  
Not anticipated to occur with this product.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity  
Not determined for the product formulation. Information for the ingredients is as follows:

<table>
<thead>
<tr>
<th>Ingredient(s)</th>
<th>Percent</th>
<th>Test Type</th>
<th>Route of Administration</th>
<th>Value</th>
<th>Units</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>100</td>
<td>LD50</td>
<td>Oral</td>
<td>3000</td>
<td>mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>100</td>
<td>LD50</td>
<td>Oral</td>
<td>4000</td>
<td>mg/kg</td>
<td>Mouse</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>100</td>
<td>LD50</td>
<td>Dermal</td>
<td>&gt; 10,000</td>
<td>mg/kg</td>
<td>Rabbit</td>
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<tr>
<td>Sodium Chloride</td>
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<td>LC50(1hr)</td>
<td>Inhalation</td>
<td>&gt; 42,000</td>
<td>mg/m3</td>
<td>Rat</td>
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<tr>
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<td>LD50</td>
<td>Intraperitoneal</td>
<td>2600</td>
<td>mg/kg</td>
<td>Rat</td>
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<td>LD50</td>
<td>Intravenous</td>
<td>2602</td>
<td>mg/kg</td>
<td>Mouse</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>100</td>
<td>LD50</td>
<td>Intravenous</td>
<td>645</td>
<td>mg/kg</td>
<td>Mouse</td>
</tr>
</tbody>
</table>

Aspiration Hazard  
None anticipated from normal handling of this product.

Dermal Irritation/Corrosion  
None anticipated from normal handling of this product. In animal studies, sodium chloride was reported to be a mild skin irritant. However, inadvertent contact of this product with skin is not anticipated to produce irritation.

Ocular Irritation/Corrosion  
None anticipated from normal handling of this product. In animal studies, sodium chloride was reported to be a mild to moderate irritant. Inadvertent contact of this product with eyes may produce irritation with redness and discomfort.

Dermal or Respiratory Sensitization  
None anticipated from normal handling of this product.

Reproductive Effects  
Physiological sodium chloride solutions are often used as negative controls in teratology experiments and do not appear to produce adverse effects on embryological development. Administration of sodium chloride has been reported not to be teratogenic in rats, hamsters, and pigs. Subcutaneous injection of 1900 or 2500 mg sodium chloride in pregnant mice increased the incidence of minor skeletal anomalies in the offspring. Increased neonatal body weight was reported in offspring of rats fed high (8%) salt diets when compared to the offspring of dams fed low salt diets.
Product Name: Sodium Chloride Injection, Concentrate

Mutagenicity
Sodium chloride was negative in the Ames test, with and without metabolic activation. Sodium chloride was positive for genotoxicity in an in vitro mouse lymphoma assay.

Carcinogenicity
The carcinogenic potential of sodium chloride has not been fully evaluated.

Target Organ Effects
Possible target organs may include the eyes, cardiovascular system, gastrointestinal system and nervous system.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity
Not determined for product. Information for sodium chloride is as follows:
LC50(96hr, flow through) = 9675-11,100 mg/L in freshwater fish
LC50(96hr, static) = 7341-17,550 mg/L in freshwater fish
LC50(24hr, static) = 13,750 - 14,125 mg/L in freshwater fish
LC50(48 hr) = 3310 mg/L in Daphnia magna.

Persistence/Biodegradability
Not determined for product.

Bioaccumulation
Not determined for product.

Mobility in Soil
Not determined for product.

13. DISPOSAL CONSIDERATIONS

Waste Disposal
All waste materials must be properly characterized. Further, 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

ADR/ADG/ DOT STATUS: Not regulated
IMDG STATUS: Not regulated
ICAO/IATA STATUS: Not regulated
Transport Comments: None
**Product Name: Sodium Chloride Injection, Concentrate**

### 15. REGULATORY INFORMATION

#### USA Regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>TSCA Status</th>
<th>CERCLA Status</th>
<th>SARA 302 Status</th>
<th>SARA 313 Status</th>
<th>PROP 65 Status</th>
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</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

**RCRA Status**  
Not Listed

**U.S. OSHA Classification**

- **Eye Irritant**
- **Target Organ Toxin**

**GHS Classification**

*In the EU, classification under GHS/CLP does not apply to certain substances and mixtures, such as medicinal products as defined in Directive 2001/83/EC, which are in the finished state, intended for the final user:

**Hazard Class**  
Not Applicable

**Hazard Category**  
Not Applicable

**Signal Word**  
Not Applicable

**Symbol**  
Not Applicable

**Prevention**  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray.

**Hazard Statement**  
Not Applicable

**Response:**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention. Wash hands after handling.

Get medical attention if you feel unwell.

**EU Classification**

*Medicinal products are exempt from the requirements of the EU Dangerous Preparations Directive. Information provided below is for the pure drug substance Sodium Chloride.

- **Classification(s):** Not Applicable
- **Symbol:** Not Applicable
- **Indication of Danger:** Not Applicable
- **Risk Phrases:** Not Applicable
- **Safety Phrases:**
  - S23 - Do not breathe vapor.
  - S24 - Avoid contact with skin.
  - S25 - Avoid contact with eyes.
  - S37/39 - Wear suitable gloves and eye/face protection.
16. OTHER INFORMATION:

Notes:

ACGIH TLV  American Conference of Governmental Industrial Hygienists – Threshold Limit Value
CAS  Chemical Abstracts Service Number
CERCLA  US EPA law, Comprehensive Environmental Response, Compensation, and Liability Act
DOT  US Department of Transportation Regulations
EEL  Employee Exposure Limit
IATA  International Air Transport Association
LD50  Dosage producing 50% mortality
NA  Not applicable/Not available
NE  Not established
NIOSH  National Institute for Occupational Safety and Health
OSHA PEL  US Occupational Safety and Health Administration – Permissible Exposure Limit
Prop 65  California Proposition 65
RCRA  US EPA, Resource Conservation and Recovery Act
RTECS  Registry of Toxic Effects of Chemical Substances
SARA  Superfund Amendments and Reauthorization Act
STEL  15-minute Short Term Exposure Limit
TSCA  Toxic Substance Control Act
TWA  8-hour Time Weighted Average

MSDS Coordinator: Hospira GEHS
Date Prepared:  10/19/2012
Obsolete Date:  11/03/2011

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