SAFETY DATA SHEET

Product Name: Sodium Chloride Injection, USP

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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

Emergency Telephone
CHEMTREC: North America: 800-424-9300; International 1-703-527-3887; Australia - 61-290372994; UK - 44-870-8200418

Product Name
Sodium Chloride Injection, USP

Synonyms
Table salt

2. HAZARD(S) IDENTIFICATION

Emergency Overview
Sodium Chloride Injection, USP 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. Based on clinical use, possible target organs may include the cardiovascular system, gastrointestinal system and nervous system.

U.S. OSHA GHS Classification

Physical Hazards
Hazard Class: Not Classified
Hazard Category: Not Classified

Health Hazards
Hazard Class: Eye Damage / Irritation
Hazard Category: 2A

Label Element(s)

Pictogram

Signal Word: Warning

Hazard Statement(s): Causes serious eye irritation

Precautionary Statement(s)

Prevention
Do not breathe vapor or spray
Wash hands thoroughly after handling
Wear eye protection/face protection

Response
Get medical attention if you feel unwell.

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.
Product Name: Sodium Chloride Injection, USP

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Active Ingredient Name</th>
<th>Sodium Chloride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Formula</td>
<td>NaCl</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>Sodium Chloride</td>
<td>1 to 24</td>
<td>7647-14-5</td>
<td>VZ4725000</td>
</tr>
</tbody>
</table>

Non-hazardous ingredients include Water for Injection. Hazardous ingredients present at less than 1% may include hydrochloric acid which is added to adjust the pH.

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 such as carbon dioxide, dry chemical extinguishing powder or foam.

**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 control 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 container label, or the product insert.

**Special Precautions**
No special precautions required for hazard control.
Product Name: Sodium Chloride Injection, USP

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Component</th>
<th>OSHA-PEL</th>
<th>ACGIH-TLV</th>
<th>AIHA WEEL</th>
<th>Hospira EEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>8-hr TWA: Not Established</td>
<td>8-hr TWA: Not Established</td>
<td>8-hr TWA: Not Established</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.
AIHA WEEL: Workplace Environmental Exposure Level
EEL: Employee Exposure Limit.
TWA: 8-hour Time Weighted Average.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance/Physical State</td>
<td>A sterile, non-pyrogenic, concentrated solution</td>
</tr>
<tr>
<td>Odor</td>
<td>NA</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>NA</td>
</tr>
<tr>
<td>pH</td>
<td>5.0 (4.5 to 7.0)</td>
</tr>
<tr>
<td>Melting point/Freezing Point</td>
<td>NA</td>
</tr>
<tr>
<td>Initial Boiling Point/Boiling Point Range</td>
<td>NA</td>
</tr>
<tr>
<td>Flash Point</td>
<td>NA</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>NA</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>NA</td>
</tr>
<tr>
<td>Upper/Lower Flammability or Explosive Limits</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Density (Air =1)</td>
<td>NA</td>
</tr>
<tr>
<td>Relative Density</td>
<td>NA</td>
</tr>
<tr>
<td>Solubility</td>
<td>Freely soluble in water; practically insoluble in dehydrated alcohol</td>
</tr>
<tr>
<td>Partition Coefficient: n-octanol/water</td>
<td>NA</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>NA</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>NA</td>
</tr>
<tr>
<td>Viscosity</td>
<td>NA</td>
</tr>
</tbody>
</table>
Product Name: Sodium Chloride Injection, USP

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 active ingredient 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>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>100</td>
<td>LC50(1hr)</td>
<td>Inhalation</td>
<td>&gt; 42,000</td>
<td>mg/m3</td>
<td>Rat</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>100</td>
<td>LD50</td>
<td>Intraperitoneal</td>
<td>2600</td>
<td>mg/kg</td>
<td>Rat</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>

LD 50: Dosage that produces 50% mortality.

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
None anticipated from normal handling of this product. 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. Hypernatremia has rarely occurred with the use of saline for induction of emesis or for gastric lavage. However, hypernatremia may occur after inappropriate intravenous use of hypertonic saline. The most serious effect of hypernatremia 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.

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.
11. TOXICOLOGICAL INFORMATION: continued

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

Reproductive Effects
None anticipated from normal handling of this product. 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.

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.

Carcinogen Lists
IARC: Not listed  NTP: Not listed  OSHA: Not listed

Specific Target Organ Toxicity – Single Exposure
NA

Specific Target Organ Toxicity – Repeat Exposure
Based on clinical use, possible target organs may include the 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.

Notes:
1. EC50: Concentration in water that produces 50% mortality in Daphnia sp.
2. LC50: Concentration in water that produces 50% mortality in fish.
3. EC50: Concentration in water that produces 50% inhibition of growth in algae.

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.
Product Name: Sodium Chloride Injection, USP

14. TRANSPORTATION INFORMATION

<table>
<thead>
<tr>
<th>ADR/ADG/ DOT STATUS</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>NA</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>NA</td>
</tr>
<tr>
<td>UN Number</td>
<td>NA</td>
</tr>
<tr>
<td>Packing Group</td>
<td>NA</td>
</tr>
<tr>
<td>Reportable Quantity</td>
<td>NA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICAO/IATA STATUS</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>NA</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>NA</td>
</tr>
<tr>
<td>UN Number</td>
<td>NA</td>
</tr>
<tr>
<td>Packing Group</td>
<td>NA</td>
</tr>
<tr>
<td>Reportable Quantity</td>
<td>NA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMDG STATUS</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>NA</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>NA</td>
</tr>
<tr>
<td>UN Number</td>
<td>NA</td>
</tr>
<tr>
<td>Packing Group</td>
<td>NA</td>
</tr>
<tr>
<td>Reportable Quantity</td>
<td>NA</td>
</tr>
</tbody>
</table>

Notes: DOT - US Department of Transportation Regulations

15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>US TSCA Status</th>
<th>Exempt. However, sodium chloride is listed on the TSCA inventory.</th>
</tr>
</thead>
<tbody>
<tr>
<td>US CERCLA Status</td>
<td>Not listed</td>
</tr>
<tr>
<td>US SARA 302 Status</td>
<td>Not listed</td>
</tr>
<tr>
<td>US SARA 313 Status</td>
<td>Not listed</td>
</tr>
<tr>
<td>US RCRA Status</td>
<td>Not listed</td>
</tr>
<tr>
<td>US PROP 65 (Calif.)</td>
<td>Not listed</td>
</tr>
</tbody>
</table>


GHS/CLP 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.

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Hazard Category</th>
<th>Pictogram</th>
<th>Signal Word</th>
<th>Hazard Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Prevention

Do not breathe vapor or spray
Wash hands thoroughly after handling
Wear eye protection/face protection

Response

Get medical attention if you feel unwell.

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.

EU Classification*

*Medicinal products are exempt from the requirements of the EU Dangerous Preparations Directive.

<table>
<thead>
<tr>
<th>Classification(s)</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol</td>
<td>NA</td>
</tr>
<tr>
<td>Indication of Danger</td>
<td>NA</td>
</tr>
<tr>
<td>Risk Phrases</td>
<td>NA</td>
</tr>
<tr>
<td>Safety Phrases</td>
<td>S23: Do not breathe vapor/spray S24: Avoid contact with the skin S25: Avoid contact with eyes S37/39 Wear suitable gloves and eye/face protection.</td>
</tr>
</tbody>
</table>
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
STOT - SE Specific Target Organ Toxicity – Single Exposure
STOT - RE Specific Target Organ Toxicity – Repeated Exposure
TSCA      Toxic Substance Control Act
TWA       8-hour Time Weighted Average

MSDS Coordinator: Hospira GEHS
Date Prepared: October 19, 2012
Date Revised: June 02, 2014

Disclaimer:
The information and recommendations contained herein are based upon tests believed to be reliable. However, Hospira
does not guarantee their accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A
WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE
MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE.
Adjustment to conform to actual conditions of usage may be required. Hospira assumes no responsibility for results
obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No
warranty against infringement of any patent, copyright or trademark is made or implied.