MATERIAL SAFETY DATA SHEET

Product Name: Potassium Phosphates Injection

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

Emergency Telephone
CHEMTREC: North America: 800-424-9300;
International 1-703-527-3887; Australia (02) 8014 4880

Hospira, Inc., Non-Emergency Product Name
224-212-2000
Potassium Phosphates Injection
Synonyms
NA

2. COMPOSITION/INFORMATION ON INGREDIENTS

Active Ingredient Name
Dibasic Potassium Phosphate, Anhydrous
Monobasic Potassium Phosphate, Anhydrous

Chemical Formula
Monobasic Potassium Phosphate KH₂PO₄
Dibasic Potassium Phosphate K₂HPO₄

Preparation
Non-hazardous ingredients include Water for Injection

<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>Dibasic Potassium Phosphate, Anhydrous</td>
<td>23.6</td>
<td>7758-11-4</td>
<td>TC5580000</td>
</tr>
<tr>
<td>Monobasic Potassium Phosphate, Anhydrous</td>
<td>22.4</td>
<td>7778-77-0</td>
<td>TC6615500</td>
</tr>
</tbody>
</table>

3. HAZARD INFORMATION

Carcinogen List

<table>
<thead>
<tr>
<th>Substance</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibasic Potassium Phosphate, Anhydrous</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Monobasic Potassium Phosphate, Anhydrous</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

Emergency Overview
Potassium Phosphates Injection is a sterile, nonpyrogenic, concentrated solution containing a mixture of mono- and dibasic potassium phosphate in water for injection. Clinically, it is indicated as a source of phosphorus, for addition to large volume intravenous fluids, to prevent or correct hypophosphatemia in patients with restricted or no oral intake. It is also useful as an additive for preparing specific intravenous fluid formulas when the needs of the patient cannot be met by standard electrolyte or nutrient solutions. In the workplace, this material should be considered potentially irritating to the eyes and respiratory tract. Possible target organs include the eyes and respiratory 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
None known from occupational exposure. In clinical use, adverse effects of oral phosphates
may include nausea, vomiting, diarrhea, and abdominal pain. Adverse reactions from parenteral potassium phosphates may occur following combined potassium and phosphorus intoxication from overdosage. Symptoms may include paresthesias of the extremities, flaccid paralysis, listlessness, mental confusion, weakness and heaviness of the legs, hypotension, cardiac arrhythmias, heart block, electrocardiographic abnormalities such as disappearance of P waves, spreading and slurring of the QRS complex with development of a biphasic curve and cardiac arrest. Phosphorus intoxication results in a reduction of serum calcium and the symptoms are those of hypocalcemic tetany.

Medical Conditions Aggravated by Exposure
Pre-existing medical conditions associated with high potassium, high phosphorus or low calcium levels; pre-existing ocular, gastrointestinal, cardiovascular or respiratory 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 container label, or the product insert.
Special Precautions  
No special precautions required for hazard control.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>Exposure limits</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monobasic Potassium Phosphate, Anhydrous</td>
<td>Not Applicable</td>
<td>N/A</td>
</tr>
<tr>
<td>Dibasic Potassium Phosphate, Anhydrous</td>
<td>Not Applicable</td>
<td>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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance/Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Clear, Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>NA</td>
</tr>
<tr>
<td>Odor Threshold:</td>
<td>NA</td>
</tr>
<tr>
<td>pH:</td>
<td>NA</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>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:</td>
<td>NA</td>
</tr>
<tr>
<td>Specific Gravity:</td>
<td>NA</td>
</tr>
<tr>
<td>Solubility:</td>
<td>NA</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water:</td>
<td>NA</td>
</tr>
<tr>
<td>Auto-ignition temperature:</td>
<td>NA</td>
</tr>
</tbody>
</table>
Product Name: Potassium Phosphates Injection

10. STABILITY AND REACTIVITY

Reactivity
Not determined

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 potassium and/or phosphate oxides.

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>
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</thead>
<tbody>
<tr>
<td>Monobasic Potassium Phosphate, Anhydrous</td>
<td>100</td>
<td>LDLo, LD50</td>
<td>Oral, Dermal</td>
<td>4640</td>
<td>mg/kg</td>
<td>Rat, Rabbit</td>
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<tr>
<td>Dibasic Potassium Phosphate, Anhydrous.</td>
<td>100</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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</tr>
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</table>

Aspiration Hazard
None anticipated from normal handling of this product.

Dermal Irritation/Corrosion
None anticipated from normal handling of this product.

Ocular Irritation/Corrosion
None anticipated from normal handling of this product. Inadvertent contact of this product with eyes may produce irritation with redness and tearing.

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

Reproductive Effects
Animal reproduction studies have not been conducted with potassium phosphate. FDA Pregnancy Category C.

Mutagenicity
No information available.

Carcinogenicity
No information available.

Target Organ Effects
In the workplace, possible target organs include the eyes and respiratory system.

12. ECOLOGICAL INFORMATION
Product Name: Potassium Phosphates Injection

Aquatic Toxicity: Not determined for product
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

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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RCRA Status: Not Listed
U.S. OSHA Classification: Possible Irritant

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
Product Name: Potassium Phosphates Injection

Symbol: Not Applicable


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 Dibasic Potassium Phosphate, Anhydrous Monobasic Potassium Phosphate, Anhydrous.

Classification(s): Not Applicable

Symbol: Not Applicable

Indication of Danger: Not Applicable

Risk Phrases: R00 - 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.

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**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

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MSDS Coordinator: Hospira GEHS
Date Prepared: 11/01/2011
Obsolete Date: 12/16/2010
Product Name: Potassium Phosphates Injection

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