

## **SAFETY DATA SHEETS**

**This SDS packet was issued with item:**

078008994

**The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).**

078008986 078009341 078009358 078009747 078416527 078421211 078436442 078836551 078836569 078836577  
078836585 078836593 078836601 078836619 078836627 078836635 078836643 078836650 078836668 078836734  
078836742 078836759 078836767 078836775 078836783 078836791 078836809 078836817 078836825

## Abbott Fluid Therapy Injectables

### Products Not Requiring Material Safety Data Sheet

The Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (29CFR1910.1200) requires manufacturers to prepare material safety data sheets for chemical products which are considered "hazardous" according to the regulation. For a chemical or formulation to be hazardous, it must present either a physical hazard or health hazard. The list below identifies those Hospira products that do not meet OSHA's "hazardous" chemical classification. Material safety data sheets have not been prepared for the products listed below.

- 4 Trace Elements Injection
- Acetic Acid Irrigation
- Aminosyn® (An Amino Acid Injection)
- Aminosyn® in Dextrose Injection
- Ascorbic Acid Injection
- Balanced Salt Solution
- Calcium Gluconate Injection
- Cardioplegic Solution (Plegisol®)
- Chromic Chloride Injection
- Cupric Chloride Injection
- Dextran in Dextrose Injection
- Dextran in Sodium Chloride Injection
- Dextrose and Lactated Ringer's Injection
- Dextrose and Ringer's Injection
- Dextrose and Sodium Chloride Injection
- Dextrose Injection
- Elliott's Solution A
- Glycine Irrigation
- Hetastarch in Sodium Chloride Injection
- Hextend® - 6% Hetastarch in Lactated Electrolyte Injection
- Ionosol® and Dextrose Injection
- Lactated Ringer's Injection
- Lactated Ringer's Irrigation
- Liposyn® (I.V. Fat Emulsion)
- LMD in Dextrose Injection
- LMD in Sodium Chloride Injection
- Manganese Chloride Injection
- Mannitol Injection
- Medical Devices
- Normosol® Injection
- Physiosol® Irrigation
- Potassium Acetate Injection
- Potassium Chloride in Dextrose and Sodium Chloride Injection
- Potassium Chloride in Dextrose Injection
- Potassium Chloride in Lactated
- Potassium Chloride in Sodium Chloride Injection
- Potassium Chloride Injection
- Ringer's and Dextrose Injection
- Ringer's Injection
- Ringer's Irrigation
- Sodium Acetate Injection
- Sodium Bicarbonate Injection
- Sodium Chloride Injection
- Sodium Chloride Irrigation
- Sodium Lactate Injection
- Sodium Phosphates Injection
- Sorbitol-Mannitol Irrigation
- Sterile Water for Injection
- Sterile Water for Irrigation
- Theophylline in Dextrose Injection
- Voluven 6% Hydroxyethyl Starch Solution
- Zinc Chloride Injection

### Disclaimer:

The information contained in these data sheets is based on the data available to Hospira as of the posting on this web site of this information, and is believed to be accurate based upon that data as of such time. This information is provided independently of any sale of the products, for purpose of hazard communication. It is not intended to constitute product performance information, and no express or implied warranty of any kind is made with respect to the product, underlying data or the information contained herein.

As received via email 09/14/2012

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## MATERIAL SAFETY DATA SHEET

**Product Name: Potassium Chloride Injection, USP**

### 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

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

**Product Name** Potassium Chloride Injection, USP

**Synonyms** None

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Ingredient Name** Potassium Chloride  
**Chemical Formula** KCl

Component	Approximate Percent by Weight	CAS Number	RTECS Number
Potassium Chloride	14	7447-40-7	TS8050000
Water	86	7732-18-5	ZC0110000

### 3. HAZARD INFORMATION

**Emergency Overview** In clinical use, this material is used for potassium replacement. Possible target organs include the blood, heart, cardiovascular system, gastrointestinal tract (if ingested) and possibly the 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: increased blood potassium, gastrointestinal upset, cardiac arrest.

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

**Product Name: Potassium Chloride Injection, USP**

**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**

**Exposure Guidelines**

Component	Exposure limits		
	OSHA-PEL	ACGIH-TLV	Hospira EEL
Potassium Chloride	8 hr TWA: Not Established	8 hr TWA: Not Established	8 hr TWA: 700 mcg/m3 STEL: Not Established

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: Potassium Chloride Injection, USP**

**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**

**Appearance/Physical State**                      Clear liquid

**Odor**    None

**Boiling Point**                                  Approximately that of water (100 °C, 212 °F).

**Freezing Point**                                Approximately that of water (0 °C, 32 °F).

**Vapor Pressure**                                Approximately that of water (17.5 mm Hg at 20 °C).

**Vapor Density (Air=1)**                      Not Applicable

**Evaporation Rate**                            Not Applicable

**Bulk Density**                                  Not Determined

**Specific Gravity**                              Approximately that of water (1.0)

**Solubility**                                      Aqueous solution. Slightly soluble in alcohol

**pH**    3.0 – 8.0

**10. STABILITY AND REACTIVITY**

**Chemical Stability**                          Stable under standard use and storage conditions.

**Incompatibilities**                            Violent reaction with BrF3 (H2SO4 and KMnO4)

**Hazardous Decomposition Products**                      Toxic fumes of Cl

**Hazardous Polymerization**                      Not Determined.

**11. TOXICOLOGICAL INFORMATION:**

**Acute Toxicity – Oral:**

Ingredient(s)	Percent	Test Type	Value	Units	Species
Potassium Chloride	100	LD50	1500-2600	mg/kg	Rats, Mice, Guinea Pigs

LD50 is the dosage producing 50% mortality.  
 Product contains approximately 14% Potassium Chloride.

**Mutagenicity**                                  Not Determined

**Target Organ Effects**                      In clinical use target organ effects include central nervous system, blood, heart, cardiovascular system and gastrointestinal tract (if ingested).

**12. ECOLOGICAL INFORMATION:**

**Aquatic Toxicity**                              Not Available

**Product Name: Potassium Chloride Injection, USP**

**13. DISPOSAL CONSIDERATIONS:**

<b>Waste Disposal</b>	Disposal should be performed in accordance with the federal, state or local regulatory requirements.
<b>Container Handling and Disposal</b>	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**

<b>TSCA Status</b>	Potassium Chloride is listed on the TSCA inventory.
<b>CERCLA Status</b>	Not Regulated
<b>SARA Status</b>	Not Regulated
<b>RCRA Status</b>	Not Regulated
<b>PROP 65 (Calif.)</b>	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

**Disclaimer:**

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## SAFETY DATA SHEET

**Product Name: Potassium Chloride Injection Concentrate, 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

**Hospira, Inc., Non-Emergency** 224 212-2000

**Product Name** Potassium Chloride Injection Concentrate, USP

**Synonyms** None

### 2. HAZARD(S) IDENTIFICATION

**Emergency Overview** Potassium Chloride Injection Concentrate, USP, is a solution containing potassium chloride. Potassium is the chief cation of body cells (160 mEq/liter of intracellular water) and is concerned with the maintenance of body fluid composition and electrolyte balance. In clinical use, it is indicated in the treatment of potassium deficiency states when oral replacement is not feasible. In the workplace, this material should be considered potentially irritating to the eyes, respiratory tract and gastrointestinal tract. Based on clinical use, potential target organs include the gastrointestinal system and cardiovascular system.

#### U.S. OSHA GHS Classification

Physical Hazards	Hazard Class	Hazard Category
	Not Classified	Not Classified

Health Hazards	Hazard Class	Hazard Category
	Eye Damage / Irritation	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  
Wear eye protection/face protection  
Wash hands thoroughly after handling

**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.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Active Ingredient Name** Potassium Chloride  
**Chemical Formula** KCl

Component	Approximate Percent by Weight	CAS Number	RTECS Number
Potassium Chloride	<15	7447-40-7	TS8050000

Non-hazardous ingredients include Water for Injection. Hydrochloric acid may be use 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 for hazard control 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**

Component	Exposure Limits			
	OSHA-PEL	ACGIH-TLV	AIHA WEEL	Hospira EEL
Potassium Chloride	8-hr TWA: Not Established			

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**

Appearance/Physical State	Clear solution
Odor	NA
Odor Threshold	NA
pH	4.6 (4.0 to 8.0)
Melting point/Freezing Point	NA
Initial Boiling Point/Boiling Point Range	NA
Flash Point	NA
Evaporation Rate	NA
Flammability (solid, gas)	NA
Upper/Lower Flammability or Explosive Limits	NA
Vapor Pressure	NA
Vapor Density (Air =1)	NA
Relative Density	NA
Solubility	NA
Partition Coefficient: n-octanol/water	NA
Auto-ignition Temperature	NA
Decomposition Temperature	NA
Viscosity	NA

**10. STABILITY AND REACTIVITY**

<b>Reactivity</b>	Not determined.
<b>Chemical Stability</b>	Stable under standard use and storage conditions.
<b>Hazardous Reactions</b>	Not determined
<b>Conditions to Avoid</b>	Not determined
<b>Incompatibilities</b>	Violent reaction with BrF3 (H2SO4 and KMnO4)
<b>Hazardous Decomposition Products</b>	Not determined. During thermal decomposition, it may be possible to generate irritating vapors and/or toxic fumes of chloride.
<b>Hazardous Polymerization</b>	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:

<b>Ingredient(s)</b>	<b>Percent</b>	<b>Test Type</b>	<b>Route of Administration</b>	<b>Value</b>	<b>Units</b>	<b>Species</b>
Potassium Chloride	100	LD50	Oral	2600 1500, 383	mg/kg mg/kg	Rat Mouse
Potassium Chloride	100	LD50	Intravenous	142, 39 117	mg/kg mg/kg	Rat Mouse

LD 50: Dosage that produces 50% mortality.

<b>Occupational Exposure Potential</b>	Information on the absorption of this product via inhalation or skin contact is not available. Avoid liquid aerosol generation and skin contact.
<b>Signs and Symptoms</b>	None anticipated from normal handling of this product. This product should be considered potentially irritating to the eyes and respiratory system. In clinical use, pain or phlebitis may occur when given intravenously via peripheral veins. Excessive doses of potassium may lead to the development of hyperkalemia, especially in patients with renal impairment. Symptoms include paraesthesia of the extremities, muscle weakness, paralysis, cardiac arrhythmias, heart block, cardiac arrest, and confusion. Cardiac toxicity is of particular concern after intravenous dosage. Nausea, vomiting, diarrhea, and abdominal cramps may occur with oral potassium salts. There have been numerous reports of gastrointestinal ulceration, sometimes with hemorrhage and perforation or with the late formation of strictures, after the use of enteric-coated tablets of potassium chloride. Ulceration has also occurred after the use of sustained-release tablets.
<b>Aspiration Hazard</b>	None anticipated from normal handling of this product. However, inadvertent aspiration of this product may produce irritation with coughing.
<b>Dermal Irritation/ Corrosion</b>	None anticipated from normal handling of this product.
<b>Ocular Irritation/ Corrosion</b>	None anticipated from normal handling of this product. However, inadvertent contact of this product with eyes may produce severe irritation with redness and tearing.
<b>Dermal or Respiratory Sensitization</b>	None anticipated from normal handling of this product.
<b>Reproductive Effects</b>	None anticipated from normal handling of this product. Animal reproduction studies have not been conducted with potassium chloride.

**11. TOXICOLOGICAL INFORMATION: continued**

<b>Mutagenicity</b>	Potassium chloride was negative in the Ames test.		
<b>Carcinogenicity</b>	Potassium chloride was negative in a two year dietary carcinogenicity study in male rats.		
<b>Carcinogen Lists</b>	<b>IARC:</b> Not listed	<b>NTP:</b> Not listed	<b>OSHA:</b> Not listed
<b>Specific Target Organ Toxicity – Single Exposure</b>	NA		
<b>Specific Target Organ Toxicity – Repeat Exposure</b>	Based on clinical use, potential target organs include the gastrointestinal system and cardiovascular system.		

**12. ECOLOGICAL INFORMATION**

<b>Aquatic Toxicity</b>	<p>Not determined for product. Information for potassium chloride is as follows:</p> <p>LC50; Species: Ceriodaphnia dubia (Water flea); Conditions: freshwater; static; Concentration: 630000 ug/L (95% confidence limit: 580000 to 670000 ug/L) for 48 hr /total.</p> <p>LC50; Species: Ceriodaphnia dubia (Water flea); Conditions: freshwater; static; Concentration: 630000 ug/L (95% confidence limit: 580000 to 630000 ug/L) for 24 hr /total.</p> <p>LC50; Species: Chironomus riparius (Midge); Conditions: freshwater; /conditions of bioassay not specified/; Concentration: 4.81 g/L (95% confidence limit: 3.93 to 5.68 g/L) for 96 hr /total.</p> <p>LC50; Species: Chironomus tentans (Midge, size 1.56 mm, 1st instar); Conditions: freshwater; static; Concentration: 1250000 ug/L for 96 hr /total.</p> <p>LC50; Species: Chironomus tentans (Midge, size 4.42 mm, 2nd-3rd instar); Conditions: freshwater; static; Concentration: 1770000 ug/L (95% confidence limit: 590000 to 5260000 ug/L) for 96 hr /total.</p> <p>LC50; Species: Chironomus tentans (Midge, size 6.07 mm, 3rd instar); Conditions: freshwater; static; Concentration: 2890000 ug/L (95% confidence limit: 2390000 to 3500000 ug/L) for 96 hr /total.</p> <p>LC50; Species: Chironomus tentans (Midge, size 5.86 mm, 3rd instar); Conditions: freshwater; static; Concentration: 3170000 ug/L (95% confidence limit: 2290000 to 4400000 ug/L) for 96 hr /total.</p> <p>LC50; Species: Chironomus tentans (Midge, size 5.78 mm, 3rd instar); Conditions: freshwater; static; Concentration: 5000000 ug/L (95% confidence limit: 4160000 to 6010000 ug/L) for 96 hr /total.</p> <p>LC50; Species: Chironomus tentans (Midge, size 5.01 mm, 3rd instar); Conditions: freshwater; static; Concentration: 5110000 ug/L (95% confidence limit: 4180000 to 6240000 ug/L) for 96 hr /total.</p> <p>LC50; Species: Chironomus tentans (Midge, size 9.41 mm); Conditions: freshwater; static; Concentration: 5300000 ug/L (95% confidence limit: 4330000 to 6520000 ug/L) for 96 hr /total.</p>
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**12. ECOLOGICAL INFORMATION:** continued

**Aquatic Toxicity** (continued)

LC50; Species: Chironomus tentans (Midge, size 8.67 mm); Conditions: freshwater; static; Concentration: 5360000 ug/L (95% confidence limit: 4430000 to 6490000 ug/L) for 96 hr /total

LC50; Species: Chironomus tentans (Midge, size 10.87 mm, 3rd-4th instar); Conditions: freshwater; static; Concentration: 6190000 ug/L (95% confidence limit: 5370000 to 7130000 ug/L) for 96 hr /total.

LC50; Species: Chironomus tentans (Midge, size 9.42 mm, 3rd-4th instar); Conditions: freshwater; static; Concentration: 6200000 ug/L (95% confidence limit: 4800000 to 7890000 ug/L) for 96 hr /total.

LC50; Species: Chironomus tentans (Midge, size 7.84 mm, 3rd instar); Conditions: freshwater; static; Concentration: 6280000 ug/L (95% confidence limit: 5260000 to 7500000 ug/L) for 96 hr /total.

LC50; Species: Chironomus tentans (Midge, size 10.43 mm, 3rd instar); Conditions: freshwater; static; Concentration: 6830000 ug/L (95% confidence limit: 6380000 to 7310000 ug/L) for 96 hr /total.

EC50; Species: Daphnia magna (Water flea); Conditions: freshwater; static; Concentration: 15.12 mM for 24 hr; Effect: intoxication, immobile /total.

LC50; Species: Daphnia magna (Water flea); Conditions: freshwater; static; Concentration: 29 mg/L for 96 hr /total.

LC50; Species: Daphnia magna (Water flea); Conditions: freshwater; static; Concentration: 117 mg/L for 72 hr /total/

EC50; Species: Daphnia magna (Water flea); Conditions: freshwater; /conditions of bioassay not specified/; Concentration: 7350 umol/L for 24 hr; Effect: intoxication, immobile /total.

EC50; Species: Daphnia magna (Water flea); Conditions: freshwater; static; Concentration: 141460 ug/L (95% confidence limit: 95300 to 170700 ug/L) for 48 hr; Effect: intoxication, immobile /total.

EC50; Species: Daphnia magna (Water flea); Conditions: freshwater; static; Concentration: 327940 ug/L (95% confidence limit: 248600 to 407200 ug/L) for 24 hr; Effect: intoxication, immobile /total.

LC50; Species: Daphnia magna (Water flea, 4th instar or adult); Conditions: freshwater; static; Concentration: 343000 ug/L for 24 hr /total.

LC50; Species: Daphnia magna (Water flea, 4th instar or adult); Conditions: freshwater; static; Concentration: 357000 ug/L for 48 hr /total.

LC50; Species: Daphnia magna (Water flea, < 24 hr); Conditions: freshwater; static; Concentration: 660000 ug/L (95% confidence limit: 440000 to 880000 ug/L) for 48 hr /total.

LC50; Species: Daphnia magna (Water flea, < 24); Conditions: freshwater; static; Concentration: 740000 ug/L (95% confidence limit: 580000 to 880000 ug/L) for 24 hr /total.

LC50; Species: Hyalella azteca (Scud); Conditions: freshwater; flow-through; Concentration: 0.41 g/L (95% confidence limit: 0.35 to 0.49 g/L) for 96 hr /total.

**12. ECOLOGICAL INFORMATION: continued**

<b>Aquatic Toxicity</b> (continued)	<p>LC50; Species: Hyalella azteca (Scud); Conditions: freshwater; flow-through; Concentration: 0.54 g/L for 48 hr /total.</p> <p>LC50; Species: Hyalella azteca (Scud, size 1.85 mm); Conditions: freshwater; flow-through; Concentration: 0.54 g/L (95% confidence limit: 0.47 to 0.61 g/L) for 96 hr /total.</p> <p>LC50; Species: Hyalella azteca (Scud); Conditions: freshwater; flow-through; Concentration: 0.63 g/L for 72 hr /total.</p> <p>LC50; Species: Hyalella azteca (Scud); Conditions: freshwater; renewal; Concentration: 134000 ug/L for 96 hr /formulated product</p> <p>LC50; Species: Hyalella azteca (Scud); Conditions: freshwater; static; Concentration: 141900 ug/L (95% confidence limit: 100700 to 199800 ug/L) for 96 hr /total.</p> <p>LC50; Species: Gambusia affinis (Western mosquitofish, female); Conditions: freshwater; static; Concentration: 435000 ug/L for 96 hr /total.</p> <p>LC50; Species: Gambusia affinis (Western mosquitofish, female); Conditions: freshwater; static; Concentration: 1990000 ug/L for 48 hr /total.</p> <p>LC50; Species: Gambusia affinis (Western mosquitofish, female); Conditions: freshwater; static; Concentration: 4700000 ug/L for 24 hr /total.</p> <p>LC50; Species: Lepomis macrochirus (Bluegill, size 5.3-7.2 cm, wt 3.5-3.9 g); Conditions: freshwater; static; Concentration: 2010000 ug/L for 96 hr; Effect: mortality, survival /total.</p> <p>LC50; Species: Oncorhynchus mykiss (Rainbow trout,donaldson trout, size 5.0-6.0 cm); Conditions: freshwater; static; Concentration: 1191000 ug/L (95% confidence limit: 923000 to 1536000 ug/L) for 24 hr /99% total.</p> <p>LC50; Species: Oncorhynchus mykiss (Rainbow trout,donaldson trout, wt 0.8-1.2 g); Conditions: freshwater; static; Concentration: 1610000 ug/L (95% confidence limit: 1223000 to 2119000 ug/L) for 48 hr /total.</p> <p>LC50; Species: Pimephales promelas (Fathead minnow); Conditions: freshwater; static; Concentration: 880000 ug/L (95% confidence limit: 750000 to 1020000 ug/L) for 96 hr /total.</p> <p>LC50; Species: Pimephales promelas (Fathead minnow); Conditions: freshwater; static; Concentration: 910000 ug/L (95% confidence limit: 750000 to 1090000 ug/L) for 48 hr /total.</p> <p>LC50; Species: Pimephales promelas (Fathead minnow); Conditions: freshwater; static; Concentration: 950000 ug/L (95% confidence limit: 750000 to 1090000 ug/L) for 24 hr /total.</p> <p>LC50; Species: Pimephales promelas (Fathead minnow, size 1.5-2.5 cm); Conditions: freshwater; static; Concentration: 2465000 ug/L (95% confidence limit: 2133000 to 2850000 ug/L) for 24 hr /99% total.</p>
<b>Persistence/Biodegradability</b>	Not determined for product.
<b>Bioaccumulation</b>	Not determined for product.
<b>Mobility in Soil</b>	Not determined for product.

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

**13. DISPOSAL CONSIDERATIONS**

<b>Waste Disposal</b>	All waste materials must be properly characterized. Further, disposal should be performed in accordance with the federal, state or local regulatory requirements.
<b>Container Handling and Disposal</b>	Dispose of container and unused contents in accordance with federal, state and local regulations.

**14. TRANSPORTATION INFORMATION**

<b>ADR/ADG/ DOT STATUS</b>	Not regulated
<b>Proper Shipping Name</b>	NA
<b>Hazard Class</b>	NA
<b>UN Number</b>	NA
<b>Packing Group</b>	NA
<b>Reportable Quantity</b>	NA
<b>ICAO/IATA STATUS</b>	Not regulated
<b>Proper Shipping Name</b>	NA
<b>Hazard Class</b>	NA
<b>UN Number</b>	NA
<b>Packing Group</b>	NA
<b>Reportable Quantity</b>	NA
<b>IMDG STATUS</b>	Not regulated
<b>Proper Shipping Name</b>	NA
<b>Hazard Class</b>	NA
<b>UN Number</b>	NA
<b>Packing Group</b>	NA
<b>Reportable Quantity</b>	NA

Notes: DOT - US Department of Transportation Regulations

**15. REGULATORY INFORMATION**

<b>US TSCA Status</b>	Exempt. However, potassium chloride is listed on the TSCA inventory.
<b>US CERCLA Status</b>	Not listed
<b>US SARA 302 Status</b>	Not listed
<b>US SARA 313 Status</b>	Not listed
<b>US RCRA Status</b>	Not listed
<b>US PROP 65 (Calif.)</b>	Not listed

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

**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.

<b>Hazard Class</b>	<b>Hazard Category</b>	<b>Pictogram</b>	<b>Signal Word</b>	<b>Hazard Statement</b>
NA	NA	NA	NA	NA
<b>Prevention</b>	Do not breathe vapor or spray Wear eye protection/face protection Wash hands thoroughly after handling			
<b>Response</b>	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.			

**15. REGULATORY INFORMATION: continued**

<b><u>EU Classification*</u></b>	*Medicinal products are exempt from the requirements of the EU Dangerous Preparations Directive.
<b>Classification(s)</b>	NA
<b>Symbol</b>	NA
<b>Indication of Danger</b>	NA
<b>Risk Phrases</b>	NA
<b>Safety Phrases</b>	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.

**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
LD <sub>50</sub>	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  
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