

#### MATERIAL SAFETY DATA SHEET

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

# 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Manufacturer Name Hospira, Inc.

And Address 275 North Field Drive

Lake Forest, Illinois 60045

USA

Hospira, formerly the Hospital Products Division of Abbott Laboratories, was Note:

created as an independent company in May 2004.

**Emergency Telephone** 

CHEMTREC: 800 424-9300

Hospira, Inc.

224 212-2055

**Product Name** Sodium Chloride

**Synonyms** None

# 2. COMPOSITION/INFORMATION ON INGREDIENTS

Sodium Chloride **Ingredient Name** 

**Chemical Formula** NaCl

Component	Approximate Percent by Weight	CAS Number	RTECS Number	
Sodium Chloride	1-24	7647-14-5	VZ4725000	
Water	76-99	7732-18-5	ZC0110000	

## 3. HAZARD INFORMATION

**Emergency Overview** In clinical use, this material is used to replace sodium. Possible target organs

include 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: electrolytes imbalance, gastrointestinal upset, increased

blood pressure.

**Medical Conditions** 

Aggravated by Exposure

Hypersensitivity to the material and/or similar materials. Pre-existing ailments

in the following organs: cardiovascular system and gastrointestinal system.

Product Name: Sodium 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** 

	Exposure limits			
Component	OSHA-PEL	ACGIH-TLV	Hospira EEL	
Sodium Chloride	8 hr TWA: Not Established	8 hr TWA: Not Established	8 hr TWA: Not Established 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: Sodium 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 Clear, colorless solution

State

OdorNot DeterminedBoiling PointNot DeterminedFreezing PointNot DeterminedVapor PressureNot DeterminedVapor Density (Air=1)Not ApplicableEvaporation RateNot Applicable

**Bulk Density** 1.151 gm/cm3 at 25 °C for 23.4% **Specific Gravity** 1.0971 gm/mL at 25 °C for 14.6%

**Solubility** Water **pH** 4.5 – 7.0

# 10. STABILITY AND REACTIVITY

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

**Incompatibilities** None

**Hazardous** Toxic fumes of Cl and Na2O.

Decomposition Products

**Hazardous** Not Determined.

**Polymerization** 

# 11. TOXICOLOGICAL INFORMATION:

#### **Acute Toxicity – Oral:**

Ingredient(s)	Percent	Test Type	Value	Units	Species
Sodium Chloride	100	LD50	4000	mg/kg	Rats, Mice, Rabbits

LD50: Dosage needed to produce 50% mortality.

Product contains between approximately 1-24% Sodium Chloride.

# **Acute Toxicity – Dermal:**

Ingredient(s)	Percent	Test Type	Value	Units	Species
Sodium Chloride	100	LD50(sc)	10,000	mg/kg	Rabbits

LD50 (sc) is the value for skin contact

#### **Acute Toxicity – Inhalation:**

Ingredient(s)	Percent	Test Type	Value	Units	Species
Sodium Chloride	100	LC50	42	mg/L	Rats

LC50 is the concentration in air that produces 50% mortality.

Product Name: Sodium Chloride Injection, USP

Mutagenicity Not Determined

**Target Organ Effects** In clinical use target organ effects include parasympathetic nervous system, the

cardiovascular system, gastrointestinal tract.

# 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** Dispose of container and unused contents in accordance with federal, state,

and Disposal and local regulations.

## 14. TRANSPORTATION INFORMATION

**DOT** Not Regulated

Notes: DOT - US Department of Transportation Regulations

## 15. REGULATORY INFORMATION

**TSCA Status** Sodium Chloride is listed on the TSCA inventory

CERCLA Status

SARA Status

RCRA Status

Not Regulated

Not Regulated

Not Regulated

Not Regulated

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 T. Straits MPH, CIH
Date Prepared September 15, 2005

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#### MATERIAL SAFETY DATA SHEET

Product Name: Lidocaine Hydrochloride and Epinephrine Injection, USP

#### 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Manufacturer Name And Hospira, Inc.

**Address** 275 North Field Drive

Lake Forest, Illinois 60045

**USA** 

**Emergency Telephone #'s** CHEMTREC: North America: 800-424-9300; International 1-703-527-3887;

Australia (02) 8014 4880

Hospira, Inc., Non-Emergency 224 212-2055

Product Name Lidocaine Hydrochloride and Epinephrine Injection, USP

Synonyms Acetamide, 2-(diethylamino)-N-(2,6-dimethylphenyl)-monohydrochloride; 2',6'-

Acetoxylidide, 2-(diethylamino)-, hydrochloride; (-)-3,4-Dihydroxy-a-

[(methylamino) methyl] benzyl alcohol

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Active Ingredient NameLidocaine HydrochlorideEpinephrineChemical Formula $C_{14}H_{22}N_2O \bullet HCl$  $C_{9}H_{13}NO_3$ 

Component	Approximate Percent by Weight	CAS Number	RTECS Number	
Lidocaine Hydrochloride	≤ 2.0%	73-78-9	AN7600000	
Epinephrine	≤ 0.002	51-43-4	DO2625000	

Non-hazardous ingredients include water and sodium chloride. Hazardous ingredients present at less than 1% include sodium hydroxide and/or hydrochloric acid (used to adjust the pH), citric acid, and sodium metabisulfite.

# 3. HAZARD INFORMATION

**Emergency Overview** 

Lidocaine hydrochloride and Epinephrine Injection, USP, contains lidocaine hydrochloride, an amide-type local anesthetic used as a local anesthetic for pain management, and epinephrine, a vasoconstrictor agent. In the workplace, this material should be considered possibly irritating to the skin, eyes and respiratory tract. Possible target organs include the nervous system and cardiovascular system.

Occupational Exposure Potential Information on the absorption of this product via inhalation or skin contact is not available. Published reports have indicated that similar local anesthetics have some potential to be absorbed through intact skin. Avoid liquid aerosol generation and skin contact.

Signs and Symptoms

Inadvertent contact with this product may cause irritation, followed by numbness. Ingestion may cause numbness of the tongue and anesthetic effects on the stomach. In clinical use, this product produces numbness when injected. In normal clinical use, adverse effects may include fever, headaches, agitation, tingling of extremities, general hypotension, bradycardia, dizziness, nausea, vomiting, anemia, back pain, post-operative pain and fetal distress. Systemic absorption can produce central nervous system (CNS) stimulation and/or CNS depression. CNS depression may progress to coma and cardio-respiratory arrest. Signs of cardiovascular toxicity may include changes in cardiac conduction, excitability, refractoriness, contractility, and peripheral vascular resistance. Toxic blood levels may cause atrioventricular block, ventricular arrhythmias, cardiac arrest, and sometimes death. In addition, decreased cardiac output and arterial blood pressure may occur. Allergic-type reactions are rare but may occur due to sensitivity to the local anesthetic or to other formulation ingredients. These reactions are characterized by signs such as urticaria, pruritus, erythema, angioneurotic edema (including laryngeal, edema), tachycardia, sneezing, nausea,



## 3. HAZARD INFORMATION: continued

**Signs and Symptoms:** vomiting, dizziness, syncope, excessive sweating, elevated temperature, and possibly,

continued anaphylactic-like symptoms (including severe hypotension). Cross sensitivity with

other amide-type local anesthetics has been reported.

Medical Conditions
Aggravated by Exposure

Pre-existing hypersensitivity to lidocaine or related amide-type anesthetics. Pre-

existing nervous system or cardiovascular ailments.

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

# 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 from this aqueous product.

**Fire & Explosion Hazard** None anticipated from 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 fire fighting 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 any 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 USP

controlled room temperature storage recommendations noted on the product case

label, the primary container label, or the product insert.

**Special Precautions**No special precautions are required for hazard controls.



# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Guidelines** 

		Exposure limits				
Component	OSHA-PEL	ACGIH-TLV	Hospira EEL			
Lidocaine Hydrochloride	8 hr TWA: Not	8 hr TWA: Not	8 hr TWA: 500 mcg/m3			
	Established	Established	STEL: 5 mg/m3			
Epinephrine	8 hr TWA: Not	8 hr TWA: Not	8 hr TWA: 1 mcg/m3			
	Established	Established	STEL: 20 mcg/m3			

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.

Respiratory Protection

Respiratory protection is normally not needed during intended product use. However, if the generation of aerosols or vapors 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, colorless liquid.

Odor Not determined.

Odor Threshold: NA

**Melting point/Freezing point:** The pH of a 2% solution is between 3.3 and 5.5.. Approximately that of water (0 °C, 32 °F). Approximately that of water (100 °C, 212 °F).

**Point Range** 

Evaporation Rate: NA
Flammability (solid, gas): NA
Upper/Lower Flammability or NA

**Explosive Limits:** 

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

Vapor Density (Air =1) NA Evaporation Rate NA

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

**Solubility** Very soluble in water and in alcohol; soluble in chloroform; insoluble in ether.

Log Partition coefficient: n-

octanol/water:

NA

**Auto-ignition temperature** NA **Decomposition temperature** NA



# 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** Strongly alkaline conditions. Methyl vinyl ether; zinc.

**Hazardous Decomposition** 

Products

Not determined. During thermal decomposition, it may be possible to generate irritating vapors and/or toxic fumes of carbon oxides and nitrogen oxides (NOx), and

intaing vapors and/or toxic runies of carbon oxides and introgen oxides (

hydrogen chloride.

**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:

Ingredient(s)	Percent	Test Type	Route of Administration	Value	Units	Species
Lidocaine Hydrochloride	100	LD50	Oral	220 292	mg/kg mg/kg	Mouse
Lidocaine Hydrochloride	100	LD50	Intraperitoneal	122 63	mg/kg mg/kg	Rat Mouse
Lidocaine Hydrochloride	100	LD50	Intravenous	21 15 25.6 24.5	mg/kg mg/kg mg/kg mg/kg	Rat Mouse Rabbit Guinea Pig
Lidocaine Hydrochloride	100	LD50	Intratracheal	28	mg/kg	Rabbit
L-Epinephrine	100	LD50	Intravenous	150 217	mcg/kg mcg/kg	Rat Mouse
L-Epinephrine	100	LD50	Dermal	62	mg/kg	Rat
Epinephrine Hydrochloride	100	LD50	Oral	90	mg/kg	Mouse
Epinephrine Hydrochloride	100	LD50	Intravenous	70	mcg/kg	Rat
Epinephrine Hydrochloride	100	LD50	Intraperitoneal	1.25 7.8	mg/kg mg/kg	Rat Mouse
L-Epinephrine Hydrochloride	100	LD50	Oral	24	mg/kg	Rat

LD 50: Dosage that produces 50% mortality.

**Aspiration Hazard** None anticipated from normal handling of this product.

**Dermal Irritation/Corrosion** None anticipated from normal handling of this product. However, inadvertent

contact with this product may be irritating to broken skin and mucous

membranes, and may produce numbness.

Ocular Irritation/Corrosion None anticipated from normal handling of this product. However, inadvertent

contact of this product with eyes may produce irritation, numbness, and blurred

vision.



# 11. TOXICOLOGICAL INFORMATION: continued

Dermal or Respiratory Sensitization None anticipated from normal handling of this product. However, inadvertent contact of this product with the respiratory system may produce irritation and numbness. Rarely, allergic-type reactions have been reported during the clinical use of lidocaine.

**Reproductive Effects** 

In a fertility study in rats, lidocaine given subcutaneously at a dosage of 30 mg/kg (180 mg/m<sup>2</sup>) to mating pairs did not produce alterations in fertility or general reproductive performance of rats. Subcutaneous administration of lidocaine to pregnant rats at a dosage of to 50 mg/kg did not produce evidence of harm to the fetus. In rabbits, there was no evidence of harm to the fetus at a subcutaneous dosage of 5 mg/kg. Treatment of rabbits with a subcutaneous dosage of 25 mg/kg produced evidence of maternal toxicity and evidence of delayed fetal development, including a non-significant decrease in fetal weight and an increase in minor skeletal anomalies. The effect of lidocaine on post-natal development was evaluated in rats by treating pregnant female rats daily subcutaneously at dosages of 2, 10, and 50 mg/kg from day 15 of pregnancy and up to 20 days post partum. No signs of adverse effects were seen either in dams or in the pups up to and including the dose of 10 mg/kg; however, the number of surviving pups was reduced at 50 mg/kg, both at birth and the duration of lactation period; this effect is most likely secondary to maternal toxicity. A second study evaluated the effects of lidocaine on post-natal development in the rat that included assessment of the pups from weaning to sexual maturity. Rats were treated subcutaneously for 8 months with 10 or 30 mg/kg lidocaine, a treatment duration that included 3 mating periods. There was no evidence of altered post-natal development in any offspring; however, both doses of lidocaine significantly reduced the average number of pups per litter surviving until weaning of offspring from the first 2 mating periods.

Mutagenicity

The mutagenic potential of lidocaine was evaluated in the Ames Salmonella reverse mutation assay, an *in vitro* chromosome aberrations assay in human lymphocytes and in an *in vivo* mouse micronucleus assay. There was no indication of any mutagenic effect in these studies.

Carcinogenicity

Long-term studies in animals to evaluate the carcinogenic potential of most local anesthetics, including lidocaine, have not been conducted.

**Target Organ Effects** 

Based on clinical use, possible target organs include the nervous system and the cardiovascular system.

## 12. ECOLOGICAL INFORMATION

**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** Epinephrine is listed as a hazardous waste. However, it is not the sole active

ingredient in this product. All wastes must be properly characterized by the waste generator. Disposal should be performed in accordance with the federal,

state or local regulatory requirements.

**Container Handling and** 

Dispose of container and unused contents in accordance with federal, state and

**Disposal** local regulations.

# 14. TRANSPORTATION INFORMATION

**DOT STATUS:** Not Regulated

Proper Shipping Name:

Hazard class:

Un number:

Packing group:

NA

Reportable quantity:

NA

ICAO/IATA STATUS Not regulated

Proper shipping name: NA
Hazard class: NA
Un number: NA
Packing group: NA
Reportable quantity: NA

IMDG STATUS Not regulated

Proper shipping name: NA
Hazard class: NA
Un number: NA
Packing group: NA
Reportable quantity: NA

Notes: DOT - US Department of Transportation Regulations

# 15. REGULATORY INFORMATION

**TSCA Status**This product is exempt. However, lidocaine hydrochloride is listed on the TSCA

inventory.

**CERCLA Status** Epinephrine - Listed

SARA 302 Status Not listed SARA 313 Status Not listed

**RCRA Status** Epinephrine - Listed

PROP 65 (Calif.) 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



# 15. REGULATORY INFORMATION: continued

**U.S. OSHA Classification** Possible Irritant

Target Organ Toxin

**GHS Classification** \*Where medicinal products are not exempt, the recommended GHS workplace

classification for this product is as follows:

Hazard Acute Oral Eye Target Organ Toxicity Toxicity Irritation

Class

Unclassified Hazard Category

2B

2

NA **Symbol** NA

Signal Word

NA

Warning

Hazard Statement

NA Causes eye irritation

May cause damage to the nervous system and cardiovascular system through prolonged or

repeated exposure.

**Prevention:** Do not breathe vapor or spray.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if Response:

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 Classifications\***

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

**Classification(s):** Harmful Irritant

Symbol:

**Risk Phrases:** 



**Indication of Danger** Xn Χi

> R22 - Harmful if swallowed R36/37 - Irritating to eyes and respiratory system

**Safety Phrases:** 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

TSCA Toxic Substance Control Act
TWA 8-hour Time Weighted Average

MSDS Coordinator: Global Occupational Toxicology

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Date Revised: February 22, 2008
Date Revised: December 30, 2009

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