MATERIAL SAFETY DATA SHEET

Product Name: Succinylcholine Chloride Injection (Quelicin)

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 | 224-212-2000 |

| Product Name | Succinylcholine Chloride Injection (Quelicin) |
| Synonyms | Suxamethonium Chloride |

2. COMPOSITION/INFORMATION ON INGREDIENTS

| Active Ingredient Name | Succinylcholine Chloride |
| Chemical Formula | C_{14}H_{30}C_{12}N_{2}O_{4} |

| Preparation | Non-hazardous ingredients include Water for Injection. Hazardous ingredients present at less than 1% may include sodium chloride; methylparaben and 0.02% propylparaben may also be added as preservatives in multi-dose solutions; sodium hydroxide and/or hydrochloric acid may be use to adjust the pH. |

| Component | Approximate Percent by Weight | CAS Number | RTECS Number |
| Succinylcholine Chloride | ≤10 | 71-27-2 | GA2360000 |

3. HAZARD INFORMATION

| Carcinogen List | |
| Substance | IARC | NTP | OSHA |
| Succinylcholine Chloride | Not Listed | Not Listed | Not Listed |

| Emergency Overview | Succinylcholine Chloride Injection (Quelicin) is a solution containing succinylcholine chloride, a depolarizing neuromuscular blocking agent used to relax muscles during anesthesia and other clinical procedures. In the workplace, this product should be considered potentially irritating to the eyes and respiratory tract. Based on clinical use, possible target organs include the muscular system, nervous system, cardiovascular system, and respiratory system. |
| Occupational Exposure | 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 following an occupational exposure. In clinical use, adverse reactions are primarily an extension of the pharmacological activity. Succinylcholine chloride can cause profound muscle relaxation, and may produce prolonged respiratory depression to the point of apnea. Infrequently, adverse reactions such as cardiac arrest, malignant hyperthermia, |
Product Name: Succinylcholine Chloride Injection (Quelicin)

arrhythmias, bradycardia, tachycardia, hypertension, hypotension, hyperkalemia, prolonged respiratory depression or apnea, increased intraocular pressure, muscle fasciculation, jaw rigidity, postoperative muscle pain, rhabdomyolysis with possible myoglobinuric acute renal failure, excessive salivation, and rash have also been reported. Hypersensitivity reactions, including anaphylaxis, may also occur.

Medical Conditions Aggravated by Exposure
Pre-existing hypersensitivity to this material; pre-existing muscle, cardiovascular, respiratory, or nervous system 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 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.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Guidelines**

<table>
<thead>
<tr>
<th>Component</th>
<th>Type</th>
<th>mg/m³</th>
<th>ppm</th>
<th>µg/m³</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Succinylcholine Chloride</td>
<td>Not Applicable</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>None Established</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, Colorless

**Odor**

NA

**Odor Threshold:**

NA

**pH:**

3.6 (3.0 to 4.5)

**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:**

NA

**Partition coefficient: n-octanol/water:**

NA

**Auto-ignition temperature:**

NA

** Decomposition temperature:**

NA
Product Name: Succinylcholine Chloride Injection (Quelicin)

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 carbon oxides (COx), nitrogen oxides (NOx), and 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:

<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>Succinylcholine</td>
<td>100%</td>
<td>LD50</td>
<td>Oral</td>
<td>125</td>
<td>mg/kg</td>
<td>Mouse</td>
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<tr>
<td>Succinylcholine Chloride</td>
<td>100%</td>
<td>LD50</td>
<td>Intravenous</td>
<td>0.43</td>
<td>mg/kg</td>
<td>Mouse</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.24</td>
<td>mg/kg</td>
<td>Rabbit</td>
</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 succinylcholine chloride.

Mutagenicity
No information found.

Carcinogenicity
The carcinogenic potential of succinylcholine chloride has not been evaluated.

Target Organ Effects
Based on clinical use, possible target organs include the muscular system, nervous system, cardiovascular system, and respiratory system.
Product Name: Succinylcholine Chloride Injection (Quelicin)

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  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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<tbody>
<tr>
<td>Succinylcholine Chloride</td>
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</tbody>
</table>

RCRA Status  Not Listed

U.S. OSHA Classification  Target Organ Toxin
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
Product Name: Succinylcholine Chloride Injection (Quelicin)

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 Succinylcholine 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
Product Name: Succinylcholine Chloride Injection (Quelicin)

MSDS Coordinator: Hospira GEHS
Date Prepared: 11/03/2011
Obsolete Date: 08/24/2010

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