

## Material Safety Data Sheet

### Section 1 -IDENTIFICATION

**Product Name: LITHIUM SULFURYL CHLORIDE CELLS AND BATTERIES**  
(all hermetically sealed Electrochem CSC/PMX cells)

**Manufacturer: Electrochem Solutions (Subsidiary of Greatbatch, Inc)**

670 Paramount Drive  
Raynham, MA 02767 USA  
Telephone: 781-830-5800 Fax: 781-575-1545

Transportation Emergency Number –**CHEMTREC** 1-800-424-9300

Revision Date -2-15-2013

### Section 2 – COMPOSITION/INFORMATION ON INGREDIENTS

**Hazardous Components:**

- |  |   |
|--|---|
| 1) Lithium- CAS#7439-93-2:                     | TLV/PEL: None est.                        |
| 2) Sulfuryl Chloride –CAS#7791-25-5            | TLV/PEL: None established                 |
| 3) Chlorine (Cl <sub>2</sub> ) –CAS# 7782-50-5 | ACGIH: 0.5mg/m <sup>3</sup> TWA/1ppm STEL |
| 4) Carbon CAS# 1333-86-4                       | ACGIH: 3.5 mg/m <sup>3</sup> TWA          |

For cell lithium content, refer to technical datasheet information.

### Section 3-HAZARDS IDENTIFICATION

**DANGER** – Internal contents are extremely hazardous. Leaking fluid is corrosive and dangerous upon inhalation. Battery may be explosive at higher temperatures.

Do not expose to temperatures above the maximum rated temperature as specified by the manufacturer due to potential leak hazard.

**If battery leaks or vents:**

**Primary Routes of Entry:** Inhalation or skin contact

**Carcinogenicity:** Not listed by NTP, IARC, or regulated by OSHA

**Health Hazards: Acute** –Vapors are very irritating to skin, eyes, and mucous membranes. Inhalation of sulfuryl chloride or thionyl chloride vapors can result in pulmonary edema.

**Chronic** – Overexposure can cause symptoms of non-fibrotic lung injury.

**Signs and symptoms of exposure :** Eye and mucous membrane irritation.

**Medical conditions generally aggravated by exposure:** Asthma, or other respiratory conditions, skin allergies, and eczema.

#### Section 4 –FIRST AID MEASURES

**Eye Contact:** Flush with running water for at least 15 minutes while holding eyelids apart. Seek immediate medical attention. Eye contact may result in acidic burns to the eye.

**Skin contact:** Rinse with large amounts of cool water for several minutes. Avoid rubbing skin. If burns develop, seek medical attention immediately.

**Inhalation:** Remove to fresh air. If difficulty breathing administer oxygen. If not breathing give artificial respiration. Significant inhalation can result in pulmonary edema. Seek medical attention.

**Ingestion:** Drink copious amounts of water (or milk). DO NOT induce vomiting. NEVER give anything by mouth to an unconscious person. Seek medical attention immediately.

#### Section 5-FIRE FIGHTING MEASURES

**Flash Point:** N/A **Auto-Ignition Temperature:** N/A **Flammable Limits:** N/A

**Extinguishing Media:** Copious amounts of water. Lith-X powder, Class D fire extinguisher, Dry Lithium Chloride, Graphite powder, and Pyrene 1-may not be effective on secondary fires.

**Special firefighting procedures:** Cover with Lith-X powder, Class D fire extinguisher, dry lithium chloride, or graphite powder. DO NOT USE CO<sub>2</sub>, Class ABC, or Soda Ash type extinguisher. Wear protective breathing apparatus such as SCBA (self contained breathing apparatus) or Air Purifying Respirator using NIOSH approved acid gas filter cartridges. Lithium based fires have a high potential to re-ignite resulting in a secondary fire.

**Unusual Fire and explosion hazards:** Do not short circuit, recharge, over charge(discharge below 0.0 volts), puncture, crush, or expose to temperatures above the manufacture rated temperature. Cells may leak, vent, or explode. Touching the positive and negative poles with a conductive metal will quickly result in heat buildup and potential vent or explosion.

#### Section 6-ACCIDENTAL RELEASE MEASURES

**Accidental Releases:** Do not breathe vapors or touch liquid with bare hands. Evacuate area until proper protective equipment is available. Only trained personnel should stop or contain a leak or spill. Neutralize spill with baking soda, soda lime, or sodium bicarbonate. Sulfuryl Chloride is highly water reactive material.

**Waste Disposal Methods:** Evacuate area. Seal leaking cell/battery in a plastic bag along with neutralizing material such as sodium bicarbonate, soda lime, or baking soda. Use appropriate personal protective equipment such as SCBA or Air Purifying respirator with acid gas cartridges. Follow local, state, and federal requirements for waste disposal.

**Other Conditions:** Follow National Emergency Response Guide, #138 for cells involved in an accident, have vented, or have exploded.