

**CECOM Material Safety Data Sheet**

Li-SOCl<sub>2</sub>: Lithium-Thionyl chloride (Li-SOCl<sub>2</sub>) battery, para. 4-8

**1. PRODUCT AND MANUFACTURER:**

**Item Identification:** Hazardous Characteristic Code: J8  
National Stock Number: (for Agency use ONLY)  
Type Number: Weight of Item(pounds):  
Common Name: Lithium-Thionyl chloride (Li-SOCl<sub>2</sub>) Item Dimensions (inches):  
battery  
Contract Number:

**Manufacturer's Identification:**

Manufacturer's Name and Address  
and ZIP code :  
Preparer's Federal Supply Code (CAGE): 81349  
Preparer: USA Communications-Electronics Command  
Directorate of Safety Risk Management  
ATTN: AMSEL-SF-SEP  
Ft. Monmouth, New Jersey 07703-5024  
Emergency & Information telephone numbers: CML: 732-427-3112, DSN: 987-3112  
800-793-4093

**2. COMPOSITION OF ITEM:**

Hazardous & Nonhazardous Components (Chemical Name, (Symbol), and [CAS#])	Exposure Limits*		Other Recommended Limits	% by Item Weight
	OSHA PEL	ACGIH		
Lithium (Li)[7439-93-2]		---		~3
Thionyl chloride (SOCl <sub>2</sub> )[7719-09-7]		1 ppm(C)		~30-35
Lithium aluminum tetrachloride (LiAlCl <sub>4</sub> )		2		~4
Carbon black (C) [1338-86-4]		3.5		≤5

\* All values reported in mg/m<sup>3</sup> unless otherwise specified.

**3. PHYSICAL AND CHEMICAL PROPERTIES:** N/A for item

Boiling Point: Melting Point:  
Vapor Pressure(mmHg): Vapor Density(Air=1):  
Evaporation Rate (butyl acetate=1):  
Solubility in Water: Specific Gravity(water=1):  
pH:  
Odor and Appearance:

#### 4. STABILITY AND REACTIVITY:

**Chemical Stability:** Stable: X Unstable:

Conditions to avoid: DO NOT attempt to recharge this battery. Do Not abuse, mutilate or short circuit the battery.

**Incompatibility:** Store in separate stacks from hazardous materials.

**Hazardous Decomposition Products:** When exposed to extreme heat/fire batteries may rupture leaking corrosive material and/or emit toxic fumes. Burning batteries may emit toxic fumes of hydrogen chloride, lithium dioxide, and oxides of sulfur.

**Hazardous Polymerization:** May Occur: Will not Occur: X

Conditions to avoid:

#### 5. HEALTH HAZARD IDENTIFICATION:

**Emergency Overview** (including **Signs** and **Symptoms, Route(s) of Entry**, etc.)

Intact batteries present no specific hazards.

**Acute Health Hazards** (e.g., Inhalation, Eye Contact, Skin Contact, Ingestion, etc.):

Burning batteries: AVOID inhalation of toxic fumes. Burning batteries emit toxic fumes, which are irritating to the lungs.

Leaking batteries: AVOID exposure to leaking electrolyte, it can cause severe irritation and/or damage to the skin, mucous membrane or eyes.

**Chronic Health Effects** (e.g., Carcinogenicity, Teratology, Reproduction, Mutagenicity, etc.): None

**Medical Conditions Generally Aggravated by Exposure:** None.

#### 6. FIRST AID MEASURES:

**Inhalation:** If battery is burning, leave the area immediately. If exposed to fumes, seek medical attention promptly.

**Skin Contact:** If battery electrolyte leaks on to the skin flush the affected area for at least 15 minutes with clean water. DO NOT attempt to neutralize. Seek medical attention promptly.

## 7. FIRE FIGHTING and EXPLOSION HAZARD DATA:

**Flammable Properties:** N/A

Flashpoint: Method:

Autoignition Temperature:

**Flammable Limits:** N/A

Lower flammable limit: Upper flammable limit:

**Hazardous Combustion Products:** Burning batteries may emit toxic fumes of hydrogen chloride, lithium dioxide, and oxides of sulfur.

**Extinguishing Media:** Class-D fire extinguisher approved for lithium; or a carbon dioxide (CO<sub>2</sub>), or dry chemical fire extinguisher, 10-B:C.

### Fire Fighting Instructions:

Personnel: Fight the fire in a defensive mode, while exiting the area. When using a CO<sub>2</sub> fire extinguisher, DO NOT re-enter the area until it has been thoroughly ventilated (i.e., purged) of the CO<sub>2</sub> extinguishing agent.

Firefighters: Use a self-contained breathing apparatus (SCBA).

## 8. ACCIDENTAL RELEASE MEASURES:

**Small Spill:** If batteries show signs of leaking, AVOID skin or eye contact with the material leaking from the battery. Use chemical resistant rubber gloves and non-flammable absorbent materials for clean-up. Coordinate disposition with the Installation Environmental Office.

## 9. HANDLING AND STORAGE:

**Handling:** DO NOT:

- Attempt to recharge this battery.
- Abuse, mutilate or short circuit the battery.

**Storage:** Gain approval for storage areas from the Installation Fire Department. Store batteries in a cool (i.e., <130°F), dry and well ventilated area.

DO NOT:

- Store batteries in direct sunlight or under hot conditions.
- Smoke and keep batteries away from open flame or heat.
- Store batteries in the same stacks with other hazardous materials.
- Store batteries in office areas, or other areas where personnel congregate.

**Work/Hygienic Practices:** Thoroughly wash hands after cleaning-up a battery spill (i.e., leaking or venting batteries). NO eating, drinking or smoking in battery storage areas.

## **10. EXPOSURE CONTROL/PERSONAL PROTECTION EQUIPMENT:**

### **Engineering Controls:**

General Exhaust:            Local Exhaust:

Special: If the battery is damaged and leaking, protect hands with chemical resistant rubber gloves. If the battery is burning, leave the area immediately.

### **Protective Equipment :**

Respiratory Protection: During fire fighting firemen should use SCBA.

Skin Protection: Use chemical resistant rubber gloves, when cleaning-up leaking batteries.

## **11. DISPOSAL CONSIDERATIONS/ECOLOGICAL INFORMATION:**

**Waste Disposal Method:** DO NOT incinerate.

1. Lithium-Thionyl chloride batteries are hazardous waste (HW) (i.e., D001, D003 and D007) under Resource Conservation and Recovery Act (RCRA) regulations. They are HW in the states of AK, CA, MN, RI and WA, which utilize bioassay to characterize HW in addition to RCRA requirements. All batteries will be managed IAW equipment TM requirements, and disposal will be IAW requirements under the Universal Waste Rule (USEPA), state and local regulations.

2. Coordinate battery disposition and disposal with the Installation Environmental Office and the servicing Defense Reutilization and Marketing Office.

**12. TRANSPORTATION INFORMATION:** Lithium-Thionyl chloride batteries are regulated under the federal hazardous materials provisions of 49 Code of Federal Regulations (CFR) parts 172.101 and 173.185.

Applicable Regulation: 49 CFR parts 172.101 and 173.185

DOT Proper Shipping Name: Lithium Battery

DOT Hazard class: 9

DOT Identification Numbers: UN3090

DOT Packaging Group (PG): II

DOT Label codes: 9

**Procedures:** Securely package batteries to withstand conditions normal to shipping. Protect batteries against short circuiting.

**Special Precautions:** Isolate and remove damaged and/or leaking batteries, if possible. Notify local health, safety and environmental agencies.