

# Material Safety Data Sheet

Model: All Lithium Battery

## Section I – Harzardous Information

Hazardous Components:

Description:

1. Lithium
2. Manganese dioxide

## Section II – Physical/ Chemical Characteristics

Boiling Point: N/A

Vapour Pressure (mm Hg): N/A

Vapour Density (AIR=1): N/A

Solubility in Water: N/A

Appearance and Odour: Cylindrical Shape, Odourless

Specific Gravity (H<sub>2</sub>O=1): N/A

Melting Point: N/A

Evaporation Rate (Butyl Acetate): N/A

## Section III – Hazard Classification

Classification: N/A

## Section IV – Reactivity Data

Stability: Stable Status

Conditions to Avoid: Fire

Incompatibility (Materials to Avoid): Acids

Hazardous Decomposition or Byproducts: N/A  
Hazardous Polymerization: Will not occur

### **Section V – Health Hazard Data**

Routes of Entry

Inhalation: N/A

Skin: N/A

Ingestion: N/A

Health Hazard (Acute and Chronic) / Toxicological information:

In case of electrolyte leakage, skin will be itchy when contaminated with electrolyte.

In contact with electrolyte can cause severe irritation and chemical burns.

Inhalation of electrolyte vapours may cause irritation of the upper respiratory tract and lungs.

### **Section VI – First Aid Measures**

First Aid Procedures:

If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately.

If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) minutes, and contact a physician.

If electrolyte vapours are inhaled, provide fresh air and seek medical attention if respiratory irritation develops. Ventilate the contaminated area.

### **Section VII – Fire and Explosion Hazard Data**

Flash Point (Method Used): N/A

Ignition Temp.: N/A

Flammable Limits: N/A

LEL: N/A

UEL: N/A

Extinguishing Media: Carbon Dioxide, Dry Chemical or Foam extinguishers

Special Fire Fighting Procedures: N/A

Unusual Fire and Explosion Hazards:

Do not dispose of battery in fire – may explode.

Do not short – circuit battery – may cause burns.

### **Section VIII – Accidental Release or Spillage**

Steps to Be Taken in Case Material is Released or Spilled:

Batteries that are leakage should be handled with rubber gloves.

Avoid direct contact with electrolyte.

Wear protective clothing and a positive pressure Self – Contained Breathing Apparatus (SCBA).

### **Section IX – Handling and Storage**

Safe handling and storage advice:

Batteries should be handled and stored carefully to avoid short circuits.

Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries.

Never disassemble a battery.

Do not breathe cell vapours or touch internal material with bare hands.

Keep batteries between 15 °C and 35 °C for prolong storage.

### **Section X – Exposure Controls / Person Protection**

Respiratory Protection (Specify Type): N/A

Ventilation

Local Exhausts: N/A

Special: N/A

Mechanical (General): N/A

Special: N/A

Other: N/A

Eye Protection: N/A

Protective Gloves: N/A

Other Protective Clothing or Equipment: N/A

Work / Hygienic Practices: N/A

### **Section XI – Ecological Information**

N/A

### **Section XII – Disposal Method**

Dispose of batteries according to government regulations.

### **Section XIII – Transportation Information**

These batteries are considered to be “Dry cell” batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO), International Air Transport Association (IATA) and International Maritime Dangerous Goods Regulations (IMDG). The only DOT requirement for shipping these batteries is special provision 130 which states: Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (For example, by the effective insulation of exposed terminals). As of 1/1/97 IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting. including the passing of the UN38.3 Test.  
"Production of MSDS proving UN Manual of Tests and Criteria, Pat III, sub-section 38.3 is met".

#### **Section XIV – Regulatory Information**

Special requirement be according to the local regulatory.

#### **Section XV – Other Information**

The data in this Material Safety Data Sheet relates only to specific material designated herein.

#### **Section XVI – Measures for fire extinction**

In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture. Fire fighters should wear self-contained breathing apparatus.

Remark : If you want to know the Lithium content in a battery , then you can get it use formula: Nominal capacity (Ah)/ 3.86(g/Ah), such as CR123A battery 's Lithium content is :  $1.3\text{Ah} / 3.86\text{g/Ah} = 0.337\text{g}$