

MATERIAL SAFETY DATA SHEET

The batteries are exempt articles and are not subject to the OSHA Hazard Communication Standard Requirement. This sheet is provided as technical information only. The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. However, JHIH HONG makes no warranty expressed or Implied.

Section 1-Product and Company Identification

| | | |
|--|------------------------------|---------------------------------------|
| Product Name: Lithium Manganese Dioxide Batteries | Size: CR2032 | Date of preparation: JAN 06 2016 |
| CHEMICAL SYSTEM: Lithium Manganese Dioxide | Trade Mark: JHT | Volts: 3 V |
| Designed for Recharge: NO | Approximate Weight: 3.2 g | |
| Company: JHIH HONG TECHNOLOGY CO.,LTD. | | Telephone Numbers: +886-2-22989236 |
| Address (Number, Street, City, State, and ZIP Code): 6F, No.15, Wu Chuan Road, Wu-Ku Industrial Park, New Taipei 248 | | Fax Numbers: +886-2-22901657 |

Section 2- Composition/Information on Ingredients

| Ingredient | CAS NO. | Content (wt%) |
|---------------------|-----------------------|---------------|
| Lithium | 7439-93-2 | 0.064 gram |
| Propylene Carbonate | 108-32-7 | 6.1 |
| Manganese dioxide | 1313-13-9 | 29.0 |
| 1,2-Dimethoxyethane | 110-71-4 | 4.2 |
| Lithium perchlorate | 7791-03-9 | 0.9 |
| Graphite | 7782-42-5 、 1333-86-4 | 3.4 |
| Polypropylene | 9003-07-0 | 4.1 |

Section 3 – Hazards Identification

This contains lithium, organic solvent, and other combustible materials. For this reason, Improper handling of the battery could lead to distortion, leakage*, overheating, explosion of fire and cause human injury or equipment trouble. Please strictly observe safety instruction.

(*Leakage is defined as an unintended escape of liquid from a battery.)

Section 4 – First Aid Measures

None unless internal materials exposure. If contents are leaked out, observe following Instructions

| | |
|------------|---|
| Inhalation | Fumes can cause respiratory irritation . Remove to fresh air and consult a physician. |
| Skin | Immediately flush skin plenty of water. If itch or irritation by chemical burn persists, consult a physician. |
| Eyes | Immediately flush eye with plenty of water for at least 15 minutes. Consult a physician immediately |
| Ingestion | If swallowing a battery, consult a physician immediately. If contents come into mouth, immediately rinse by plenty of water and consult a physician. |

Section 5-Fire Fighting Measures

Extinguishing Media Extinguisher of alkaline metal fire is effective.
Plenty of cold water is also effective to cool the surrounding area and control the spread fire. But hydrogen gas may be evolved by the reaction of water and lithium and it can form an explosive mixture. Therefore in the case that lots of lithium batteries are burning in a confined space ,use a smothering agent.

Fire fighting procedure Use self-contained breathing apparatus and full protective gear not to inhale harmful gas .

Section 6-Accidental Release Measures

Accidental Releases: Do not breathe vapors or touch liquid with bare hands (see section 4).

Waste Disposal Methods: Evacuate area. If possible, a trained person should attempt to stop or contain the leak by neutralizing spill with soda lime or baking soda. A NIOSH Approved Acid Gas Filter Mask or Self-Contained Breathing Apparatus should be worn. Seal leaking battery and soda lime or baking soda in a plastic bag and dispose of as hazardous waste.

Other: Follow North American Emergency Response Guide (NAERG)#138 for cells involved in an accident, cells that have vented, or have exploded.

Section 7-Handling and Storage

1) Handling

Never swallow. Never reverse the positive and negative terminals when mounting . Never short-circuit the battery. Never heat. Never expose to open flame. Never disassemble. Never weld the terminal or wire to the body of the battery directly. Never touch the liquid leaked out of battery . Never bring fire close to battery liquid. Never keep in touch with battery.

2) Storage

Never let the battery contact with water. Never store the battery in hot and high humid place. Don't push the battery

excessively and destroy the battery packaging, often wet and ventilating the dry place to keep in the normal atmospheric temperature, find the unusual battery is dealt with in time

Section 8 – Exposure Controls, Personal Protection

| | |
|---------------------------|------------------|
| Respiratory Protection | NA |
| Ventilation | Local Exhaust NA |
| | Mechanical NA |
| | Special NA |
| | Other NA |
| Eye Protection | NA |
| Protective Gloves | NA |
| Other protective clothing | NA |

Section 9 – Physical/Chemical Characteristics

State of matter: Solid state

Form : Button type

Color: True quality of stainless steel

Smell : Tasteless (At the time of the fullness)

Resolve temperature: NA

Spontaneous combustion temperature: NA

Explosion demarcation line : Higher than 170 degrees Centigrade of batteries will be burnt

To the density (Water =1): NA

Dissolving: NA

Boiling Point: 1,2-Dimethoxyethane : 83°C

Vapor Pressure: 1,2-Dimethoxyethane :6.40(20°C)

Vapor Density: 1,2-Dimethoxyethane : 3.11

Solubility in Water: 1,2-Dimethoxyethane : :diffluence contact with water

Specific Gravity: 1,2-Dimethoxyethane :1.63

Melting Point: 1,2-Dimethoxyethane :-67°C

Evaporation Rate: N/A

Water Reactive: 1,2-Dimethoxyethane : :diffluence contact with water

Appearance & Odor: 1,2-Dimethoxyethane : achromatism liquid; slight aether odor.

Section 10 – Stability and Reactivity

| | |
|---------------------------------------|-----------------|
| Stability | Stable |
| Incompatibility | Water |
| Hazardous polymerization | Will not occur. |
| Condition to avoid | See section 7. |
| Hazardous Decomposition or Byproducts | Hydrogen |

As the related district, country or airline may establish their special requirements, the shipper shall confirm them with the forwarder in advance.

Please confirm the aggregate lithium content when transport the battery.

Section 15-Regulatory Information

Major applicable regulations for the transportation of lithium metal cells and batteries are as follows:

- 1) UN(United Nations)Recommendations on the Transport of Dangerous Goods:Model of Regulations 18th revised edition
- 2) UN(United Nations)Recommendations on the Transport of Dangerous Goods:Manual of Test and Criteria 5th revised edition,Amendment 2
- 3) International Civil Aviation Organization(ICAO):Technical Instructions for Safety Transport of Dangerous Goods by Air,2015-2016 Edition
- 4) International Air Transport Association(IATA): Dangerous Goods Regulations,57th Edition
- 5) International Maritime Organization(IMO): International Maritime Dangerous Goods(IMDG)Code,2014 Edition

Section 16-Other Information

Major environmental regulations are as follows:

- 1) EU BATTERY DIRECTIVE(2006/66/EC)
- 2) California Code of regulations ,Title 22,Division 4.5,Chapter 33:Best Management Practices for Perchlorate Materials

Note:

(1)The symbol in above-mentioned materials " ——"representative consult at present it materials not relevant, but symbol "NA" represent field the getting more suitable for material.

(2)If you want further information, please contact JHIH HONG sales representative.

6F, NO.15, WU CHUAN RD., WU-KU INDUSTRIAL PARK,
NEW TAIPEI CITY, TAIWAN

Tel:+886-2-2298-9236 Fax:+886-2-2290-1657

E-mail: service@jht-energy.com <http://www.jht-energy.com>



Last data revised 2016.01.06