

Safety Data Sheet for Lithium Button Cell Series

Document Number: CR Minicell 2024
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SECTION 1 – Manufacturer Information
Manufacturer's Name: MMD Hong Kong Holding Limited
Emergency & Information Phone No. 86-755-3635 8914
Address: Units 1208-11, 12th Floor, C-Bons International Center, 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong
Signature of Prepare (Optional)
SECTION 2– Hazardous Ingredients / Identification
Emergency Overview GHS Classification N.A Hazards : The individual battery is sealed hermetically. Thus, the ingredients have no hazard potential, except the battery is violated or dismantled. Electrolyte and Lithium Metal are inflammable , if batteries are disposed in fire or heated above 100°C, Stacking, or jumbling batteries may cause external short circuits, heat generation, fire Or explosion. Vapor generated from burning batteries, may irritate eyes, skin and throat. IMPORTANT: Use under normal conditions, the lithium battery is hermetically sealed. Ingestion: Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential of the esophagus. <u>IMMEDIATELY SEE DOCTOR</u> ; Do not induct vomiting or give food or drink. Inhalation: Contents of an open battery can cause respiratory irritation. Skin Contact: Contents of an open battery can cause skin irritation. Eye Contact: Contents of an open battery can cause severe irritation.

SECTION 3– Health Hazard Data
Route(s) of Entry

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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 vapors may cause irritation of the upper respiratory tract and lungs

Composition Information

<i>Substance Name</i>	<i>Chemical Identification CAS#</i>	
Manganese Dioxide	1313 - 13 - 9	26%
Lithium	7439 - 93 - 2	2 %
Lithium Perchlorate	7791 - 03 - 9	2.5 %
[EGDME] 1,2-dimethoxyethane	110-71-4	**1.5%
Propylene Carbonate	108 - 32 - 7	4%
Polypropylene	9003-07-0	6.5%
Methylal	109-87-5	7%
Graphite	7782 – 42 - 5	7.5 %
Steel	12597-69-2	43 %

** see REACH / SVHC declaration

SECTION 4 – First Aid Measures

Ingestion: Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential of the esophagus. IMMEDIATELY SEE DOCTOR ; Do not induce vomiting or give food or drink.
Inhalation : Provide fresh air and seek medical attention.
Skin Contact : Remove contaminated clothing and wash skin with soap and water
Eye Contact : Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

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SECTION 5 –Control Fire Measures

In case of fire where lithium batteries are present, flood area with water or smother with a Class D fire extinguishant appropriate for lithium metal, such as lith-X. Water may not extinguish burning batteries but will cool the adjacent batteries and control the spread of fire. Burning batteries will burn themselves out. Virtually all fires involving lithium batteries can be controlled by flooding with water. However, the contents of the battery will react with water and form hydrogen gas. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended. A smothering agent will extinguish burning lithium batteries. Emergency Responders should wear self-contained breathing apparatus. Burning lithium manganese dioxide battery produce toxic and corrosive lithium hydroxide fumes.

SECTION 6 – Accidental Release or Spillage

Ventilation Requirements: Room ventilation may be required in areas where there are open or leaking batteries

Respiratory Protection : Avoid exposure to electrolyte fumes from open or leaking batteries

Eye Protection: Water safety glasses with side shields if handling an open or leaking batteries

Gloves: Use neoprene or natural rubber gloves if handling an open or leaking batteries, battery materials should be collected in a leak-proof container.

SECTION IX – Safety Warning for Swallowed Hazardous

 WARNING KEEP OUT OF REACH OF CHILDREN Swallowing can lead to chemical burns, perforation of soft tissue, and death. Severe burns can occur within 2 hours of ingestion. Seek medical attention immediately.	
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****IEC60086-4, 2019 Child resistance New Marking, IEC60086-4(2019)****

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Keep out of reach of children. Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential perforation of the esophagus. Immediately see doctor or ring <u>LOCAL EMERGENCY CALL.</u> Keep in original package until ready to use. Dispose of used batteries immediately.

SECTION 7 – Handling and Storage

Storage : Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life. In locations that handle large quantities of lithium batteries, such as warehouse, lithium batteries should be isolated from unnecessary combustible.
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Mechanical Containment: If potting or sealing the battery in an airtight or watertight container is required, consult your us representative for precautionary suggestions. Do not obstruct safety release vents on batteries, Encapsulation of batteries will not allow cell venting and can cause high pressure rupture.
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Handling: Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy, generate significant heat and can cause the safety release vent to open. Source of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices. Damaging a lithium battery may result in an internal short circuit.
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<u>The contents of an open battery</u>, including a vented battery, when exposed to water, may result in a fire and/or explosion. Crushed or damaged batteries may result in a fire.

<u>If soldering or welding to the battery</u> is required, consult us for proper precaution to prevent seal damage or short circuit.

Charging: This battery is manufactured in a charged state. Its is not designed for recharging. Recharging can cause battery leakage or in some case, high pressure rupture. Inadvertent charging can occur if a battery is installed backwards
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SECTION 8 – Exposure Controls / Person Protection

Ventilation Requirements : N.A.

Respiratory Protection: N.A.

Eyes Protection : N.A.

Gloves: N.A.

SECTION 9– Physical / Chemical Characteristics

Boiling Point: N.A.

Specific Gravity (H₂O = 1) : N.A.

Melting Point : N.A.

Vapor Pressure (mm Hg) : N.A.

Vapor Density (AIR = 1) : N.A.

Evaporation Rate (Butyl Acetate) : N.A.

Solubility in Water : N.A.

Appearance and Odor , Cylindrical Shape, Odorless

SECTION 10 – Reactivity Data

Stability : stable

Conditions to Avoid : Stable

Incompatibility: Materials to Avoid

Lithium manganese batteries do not meet any of the criteria established in 40CFR 261.2 for reactivity

SECTION 11– Toxicological Information: N.A.

SECTION 12 – Ecological Information: N.A.

SECTION 13– Disposal Method: Dispose of the batteries according to government regulations.

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SECTION 14 – Transport Information

General considerations:

Lithium primary button cells manufactured by us are considered to be UN3090 Lithium Metal Batteries and are tested according to UN38.3 of the UN Manual Of Tests and Criteria for compliance with the requirements of special provisions ADR188, IMDG 188, as well as the requirements of DOT/49 CFR chapter 173.185, and the General Requirements of IATA DGR packing instruction 968. Positive test results as well as other relevant information required for transportation are stated in dedicated Declarations of Conformity.

Transportation of cells or batteries packed with equipment or contained in equipment have to follow the appropriate regulation: UN 3091.

Compilation of transport requirements for Lithium batteries can be found in :

www.lithium-batterie-serve.de/en

www.iata.org/whatwedo/cargo/dgr/documents/lithium-battery-shipping-guidelines.pdf

The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.

Shipping Mode	Lithium content	Net quantity wt per pack	Battery Model			
Air	≤ 0.3 g /cell	≤ 2.5 Kg	All Lithium Coin	NO	YES	YES
Land / Sea	ALL	ALL	ALL	NO	YES	YES

**** In the event of an incident during transportation call 1-900-424-9300 (North-America/ 1-703-527-3887 (international), or 911 if case serious.**

The Batteries in all forms of transportation (e.g. Truck, air, or sea) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in (Strong Carton / Packaging) that prevents spillage of contents. The lithium button cell are exempt from the classification as dangerous goods as they meet the requirements of the special provisions listed below (Essentially, they are properly packaged and labeled, Contains **less than 1 gram** of lithium and pass the tests defined in UN model regulation section 38.3).

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Regulatory Parties	Special Provisions
ADR	188,230,310,636,656
IMDG	188,230,310,957
UN	UN3090, UN3091
US DOT	29,A54,A101,A100
IATA, ICAO	Packaging Instructions 968 – 970 (section II)

Ref: Summary of Packing Instruction (2024 IATA Dangerous Goods Regulations 65th Edition) the minimum requirements necessary to transport as non-restricted goods are as follows

1. For a lithium metal/lithium alloy cell, the lithium content is not more than 0.3 gm.
2. Each package must be displayed a battery handling label. (Tel no and emergency call must be printed on label)
3. Each consignment must be accompanied with a declaration of Dangerous goods document.
4. The Original package (NL) must be packed by Strong carton. .

Lithium Metal Content

Model No	Lithium / g	Model No:	Lithium / g
CR2450	0.18	CR2430	0.090
CR2330	0.08	CR2320	0.043
CR2032	0.07	CR2025	0.050
CR2016	0.03	CR1620	0.030
CR1616	0.02	CR1225	0.015
CR1220	0.01	CR1216	0.010
CR927	0.01	CR1632	0.040

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SECTION 15 – Regulatory Information: Special requirement be according to the local regulations.

Comply with European Union 'Battery Directive' 2006/66/EC, 2013/56/EU, 2006/66/EC, 2013/56/EU

Regulation (EC) No. 1907/2006 on the Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) : Except 1,2 Dimethoxyethane (EGDME), there are neither contain any of substances listed in the candidate list of Substances of Very High Concern (SVHC), nor in the recommendation list for inclusion into annex XIV, nor into annex XIV above a concentration of 0.1% weight by weight.

SECTION 16 – Other Information:

This SDS is provided to customers as reference, in order to handle batteries in safety. It is necessary for the customer to take appropriate measures depending on the actual situation such as the individual handling, based on this information.

In California only, packages that contain CR Li coin cells and the Owner's/Operation Instructions of Products that contains CR Coin cells must included the following statement: Perchlorate Material – Special handling may apply
See below URL: www.dtsc.ca.gov/hazardouswaste/perchlorate.

The effective date for such Perchlorate label is July 1, 2006 for non-consumer products and January 1, 2007 for consumer products