GP Batteries

Material Safety Data Sheet for Coin Type Lithium Manganese Dioxide Battery

Note: Blank spaces are not permitted if any item is not applicable or no information is available, the space must be marked to indicate that.

1. Product and Company Identification

Company Name GPI International Ltd.	Emergency Telephone Number Within USA and Canada: +1-800-424-9300 Outside USA and Canada: +1-703-527-3887
Address (Number, Street, City, State, and ZIP Code) 7/F, Building 16W, 16 Science Park West Avenue Hong Kong Science Park, New Territories, Hong Kong	Telephone Number for information (+852) 24843333
Product Name Coin Type Lithium Manganese Dioxide Battery (CR)	Date of prepared and revision January 01 2026
Manufacturer Changzhou Lithium Batteries Ltd.	Signature of Preparer (optional)

2. Hazard(s) Identification

(a) Preparation hazards and classification

The battery is sealed in the cap and can made of stainless steel and it is not dangerous with normal use. Do not dismantle, open or shred the battery ingredients contained within or their ingredients products could be harmful. For this reason, improper handling of the battery could lead to distortion, leakage (Leakage is defined as an unintended escape of liquid from a battery.), overheating, explosion, or fire and cause human injury or equipment trouble. Please strictly observe safety instructions. DEATH or serious injury can occur if ingested. A swallowed button cell or coin battery can cause Internal Chemica Bums in as little as 2 hours. KEEP new and used batteries OUT OF REACH OF CHILDREN. Seek immediate medical attention if a battery is suspected to be swallowed or inserted inside any part of the body.

(b) Primary Route of Exposure

Battery chemicals are contained in a stainless-steel enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by Inhalation, Ingestion, Eye contact and Skin contact.

(c) Potential Health Effects

In the event this battery has been ruptured, the electrolyte solution contained within the battery would be corrosive and can cause burns.

Inhalation: Inhalation of materials from a sealed battery is not an expected route of exposure. Vapors or mist from a ruptured battery may cause respiratory irritation.

Ingestion: Swallowing of materials from a sealed battery is not an expected route of exposure. Swallowing the contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

Manufacturer reserves the right to alter or amend the design, model and specification without prior notice.

Skin: Contact between the battery and skin will not cause any harm. Skin contact with contents of an open battery can cause severe irritation or burns to the skin.

Eye: Contact between the battery and the eye will not cause any harm. Eye contact with contents of an open battery can cause severe irritation or burns to the eye.

Chronic (long term): see section 11 for additional toxicological data.

3. Composition/information on Ingredients

Chemical name	CAS#	重量占比%)
Manganese Dioxide（MnO2）	1313-13-9	25 to 40
Propylene Carbonate（C4H6O3）	108-32-7	2 to 6
1,2-Dimethoxyethane (C4H10O2）	110-71-4	0 to 5
Lithium Perchlorate (LiClO4）	7791-03-9	0.1 to 2
Lithium (Li)	7439-93-2	1 to 4
Carbon	12597-69-2	1 to 4
Stainless steel	12597-68-1	20 to 55
Polypropylene	9003-07-0	0.2 to 5

Metal Li content for each cell

Model	Li content (g)		Model	Li content (g)
CR927	0.009		CR2016	0.026
CR1025	0.009		CR2025	0.046
CR1220	0.012		CR2032	0.068
CR1225	0.014		CR2430	0.084
CR1616	0.014		CR2450	0.174
CR1620	0.022		CR2477	0.275
CR1632	0.039			

4. First-aid Measures

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

Inhalation: Remove source of contamination or move victim to fresh air. Obtain medical advice.

Ingestion: Please rinse mouth thoroughly with water, induce vomiting under the guidance of professional personage. Please seek medical treatment in time.

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Skin contact: immediately flush skin with plenty of water. If itch or irritation by chemical burn persists, consult a physician.

Swallow: if swallowing a battery, consult a physician immediately. If contents come into mouth, immediately rinse by plenty of water and consult a physician.

5. Fire-fighting Measures

Characteristics of Hazard: toxic fumes, gases or vapors may evolve on burning.

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. In the case that lots of lithium metal batteries are burning in a confined space, use a smothering agent (e.g. carbon dioxide or dry sand).

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

6. Accidental Release Measures

In case of that the battery release liquid, wipe it with a dry cloth.

Keep the battery away from fire or heat.

7. Handling and Storage

☒ Never swallow.

If swallowed, see Section 4-First Aid Measures.

☒ Never charge.

The battery is not designed to be charged by any other electrical source. Charging could generate gas and internal short-circuiting, leading to distortion, leakage, overheating, explosion or fire.

☒ Never heat.

Heating the battery to more than 100 degrees centigrade could increase the internal pressure, causing distortion, leakage, overheating, explosion or fire.

☒ Never expose to open flames.

Exposing to flames could cause the lithium metal to melt, causing the battery to catch on fire and explosion.

☒ Never disassemble the battery.

Do not disassemble the battery, because the separator or gasket could be damaged, leading to distortion, leakage, overheating, explosion or fire.

☒ Never reverse the positive and negative terminal when mounting.

Improper mounting of the battery could lead to short-circuiting, charging or forced-discharging.

This could cause distortion, leakage, overheating, explosion, or fire.

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☒ Never short-circuit the battery.

Do not allow the positive and negative terminals to short-circuit. Never carry or store the battery with metal objects such as a necklace or a hairpin. Do not take multiple batteries out of the package and pile or mix them when storing. Otherwise, this could lead to distortion, leakage, overheating, explosion or fire.

☒ Never weld the terminals or weld a wire to the body of the battery directly.

The heat of welding or soldering could cause the lithium to melt, or cause damage to the insulating material in the battery. This could cause distortion, leakage, overheating, explosion or fire.

☒ Never use different batteries together.

Using different batteries together, i.e. different type or used and new or different manufacturer could cause distortion, leakage, overheating, explosion or fire because of the differences in battery property.

☒ Never allow liquid leaking from the battery to get in your eyes mouth.

If the liquid comes into eyes, or mouth, see Section 4-First Aid Measures.

☒ Never leaking batteries away from fire.

If leakage is suspected or you detect a strong odor, keep the battery away from fire, because the leaked liquid could catch on fire.

☒ Never touch liquid leaking from the battery.

If the liquid enters the eyes or mouth, see Section 4 - First Aid Measures.

☒ Never allow battery liquid to get contact with a naked flame.

If leakage or a strong odor is detected, keep the battery away from all naked flames. The leaked liquid is inflammable.

☒ Never attach a battery to the skin.

Attaching a battery to the skin using tape, etc. should be avoided. Moisture from the skin can cause battery discharge, which can produce certain chemical substances that burn the skin.

☒ For storage, never let the battery contact with water. Never store the battery in hot and high humid place.

8. Exposure Controls/Personal protection

No engineering controls are required for handling battery that has not been damaged.

Personal protective equipment for damaged batteries should include chemical resistant gloves and safety glasses.

Respiratory Protection: Not necessary under conditions of normal use.

Ventilation: Not necessary under conditions of normal use.

Eye Protection：Not necessary under conditions of normal use.

Protective Gloves: Not necessary under conditions of normal use.

Other protective clothing: Not necessary under conditions of normal use.

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9. Physical and Chemical Properties

Boiling Point: NA Vapor Pressure: NA Melting Point: NA

Vapor Density: N/A Evaporation Rate: NA Solubility in Water: NA

Appearance and Odor: Coin Shape, odorless

10. Stability and Reactivity

Stability: Stable (Performance deterioration depends on circumstance.)

Incompatibility: Water

Hazardous polymerization: Will not occur.

Condition to avoid: See section 7.

Hazardous Decomposition or Byproducts: Hydrogen (By moisture)

11. Toxicological Information

Under normal use, as the contents are sealed in the battery case, there is no toxicity.

Irritation: in the event of exposure to internal content, vapor fumes may be very irritating to the eyes and skin.

Sensitization: NA

Reproductive Toxicity: NA

Toxicologically Synergistic: NA

12. Ecological Information

If the battery is disposed of on land or in water, the battery case may corrode and liquid leak from the battery.

Ecological information has not been reported.

13. Disposal Considerations

The battery may be regulated by national or local regulation. Please follow the instructions of proper regulation. As electric capacity is left in a discarded battery and it comes into contact with other metals, it could lead to distortion, leakage, overheating, or explosion, so make sure to cover the (+)and (-) terminals with friction tape or some other insulator before disposal.

14. Transport Information

(1) This report applies to sea transportation, air transportation, road transportation and railway transportation.

(2) Our company has been qualified by the ISO9001 Quality Management System. The battery passed the test items of the UNITED NATONS “Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria” section 38.3 and meet the requirements of UNITED NATIONS “Recommendations on the Transport of Dangerous Goods, model Regulations”.

(3) Shipping name (UN number) applicable to the metal lithium battery or batteries：

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Lithium metal batteries (UN3090)

Lithium metal batteries packed with equipment (UN3091)

Lithium metal batteries contained in equipment (UN3091)

(4) Transport by sea

The international Maritime Dangerous Goods (IMDG) Code

UN Classification (Transport hazard class): Not applicable

UN Packing Group: Not applicable

The battery is not restricted according to IMO IMDG Code (inc. Amendment 42-24) Special Provision 188.

(5) Transport by air

The international Civil Aviation Organization (ICAO) Technical Instructions.

The international Air transport Association (IATA) Dangerous Goods Regulations

The battery can be shipped by air in according to PACKING INSTRUCTION 968 Section IB,

or PACKINGINSTRUCTION 969~970 Section II of the 2026 IATA Dangerous Goods regulations 67th Edition.

UN Classification (Transport hazard class): Class 9 (P1968 Section IB) or not applicable (PI 969~970 Section II).

(6) by land and railway transportation: refer to GB12268-2012 and JT/T 617-2018

(7) General packaging requirements: the cells or batteries must be protected to prevent short circuits. The cells or batteries or equipment must be packed in suitable strong outer packaging. If batteries contained in equipment, equipment must be secured against movement within the outer packaging and be packed to prevent accidental activation. Packaging shall be adequate to avoid mechanical damage during transport, handling and stacking and to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.

The package must be handled with care and that a flammability hazard exists if the package is damaged.

15. Regulatory Information

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

International Civil Aviation Organization ICAO Technical instructions ICAO

Unless be exempted according to ICAO TI, the lithium metal cell/batteries (UN 3090, PI 968) are forbidden for carriage on passenger aircraft.

-The international Air transport Association (IATA) Dangerous Goods Regulations.

The battery can be shipped by air in according to PACKING INSTRUCTION 968 Section IB, or PACKING INSTRUCTION 969~970 Section II of the 2026 IATA Dangerous Goods regulations 67th Edition)

Classification (Transport hazard class): Class 9 (P1 968 Section IB) or Not applicable PI 969~970 Section

II.

-The international Maritime Dangerous Goods (IMDG) Code

UN Packing Group: Not applicable

The battery is not restricted according to IMO IMDG Code (inc. Amendment 42-24) Special Provision 188.

Major environmental regulations are as follows:

EU Battery regulation (EU)2023/1542

Regulation (EC) No 1907/2006 concerning the REACH.

16. Other Information

The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge.

For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. The SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

END OF SDS

Manufacturer reserves the right to alter or amend the design, model and specification without prior notice.