

GP Batteries

Material Safety Data Sheet

Model No.: GP Lithium button cell

Document Number: MSDS-CR-002

Revision:2

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IDENTITY (As Used on Label and List)
Lithium 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.

Section 1- Identification

Product Name	Lithium Battery
Manufacturer's name, address, telephone number	Manufacturer: GP Batteries International Ltd. Address: 7/F, Building 16W, 16 Science Park West Avenue, Hong Kong Science Park, New Territories, Hong Kong Tel: +852-24843111
Emergency phone number	Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-527-3887
Date of prepared and revision	Jan 1, 2022

Section 2 – Hazards Identification

GHS Classification: Class 9 (Miscellaneous)

The 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.

Section 3 – Composition/Information On Ingredients

INGREDIENT NAME	CAS#	Content %
Manganese Dioxide	1313-13-9	16 - 37
Lithium metal	7439-93-2	1 - 3
1,2 Dimethoxyethane	110-71-4	2.6 - 5.8
Lithium Perchlorate	7791-03-9	0.6 - 1.3
Propylene Carbonate	108-32-7	4.3 - 8
Graphite	7782-42-5, 1333-86-4	1.8 - 5.5
Steel	7439-86-6, 7440-47-3	30 – 85
Polypropylene	9003-07-0	0.5-10

Section 4 – First Aid Measures

a) Description of necessary measure, subdivided according to different routes of exposure, i.e., inhalation. Skin and eye contact, and ingestion

Inhalation Fumes can cause respiratory irritation. Remove to fresh air and consult a physician.

Skin Contact Immediately flush skin with soap and plenty of water. If itch or irritation by chemical burn persists, consult a physician.

Eye Contact Immediately flush eye with flowing lukewarm water for a minimum of 15 minutes. Consult a physician immediately.

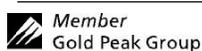
Ingestion If swallowing a battery, consult a physician immediately. If content come into mouth, immediately rinse by plenty of water and consult a physician.

b) Most important symptoms/ effects, acute and delayed:

N/A

c) Indication of immediate medical attention and special treatment needed, if necessary:

Wash with clean water immediately



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

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Section 5 – Fire-Fighting Measures

Extinguisher agent: 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 evolve 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

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

Section 6 – Accidental Release Measures

Respiratory protection (Special type): Avoid exposure to electrolyte fumes from open or leaking batteries

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

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

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

Section 7 – Handling and 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.

Mechanical Containment: If potting or sealing the battery in an airtight or watertight container is required, consult your GP Batteries International Ltd 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.

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.

The contents of an open battery, 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.

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

Do not recharge.

Do not puncture or abuse.

Section 8– Exposure Control / Person Protection

Respiratory protection (Special type): N/A

Ventilation: N/A

Protective Gloves: N/A

Eye Protection: N/A

Other Protective Clothing: N/A

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Section 9 - Physical / Chemical Properties

Boiling Point(°C):	N/A	Specific Gravity (H2O =1)	N/A
Vapor Pressure (mm Hg @ 25°C):	N/A	Evaporation Rate (Butyl Acetate = 1)''	N/A
Vapor Density (AIR = 1):	N/A	Melting Point	N/A
Solubility in Water (% by Weight):	N/A		
Appearance and Odor:	Coin shape, Contents are sealed in stainless steel vessel		

Section 10 – Stability and Reactivity

Stable or Unstable:	Stable
Incompatibility (Materials to avoid)	Water
Hazardous polymerization	N/A
Hazardous Decomposition products:	Hydrogen
Conditions to avoid:	See Section 7

Section 11 – Toxicological Information

Acute Toxicity:

1,2-Dimethoxyethane:

LC50 (Inhalation): N/A

LD50: N/A

Eye Effects: Corrosive

Skin Effects: Corrosive

Section 12 – Ecological Information

Aquatic Toxicity: Do not let internal components enter marine environments. Avoid releases into waterways, wastewater, or groundwater.

Section 13 – Disposal Considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.

The battery may be regulated by national or local regulation. Please follow the instructions of proper regulation.

If you choose to retain discharged batteries and recycle be sure to store them out of the reach of children and pets.

Do not store with adult medications of similar size of shape.

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Section 14 – Transportation Information

Lithium primary button cells manufactured by. 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.

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).

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	Dangerous Goods Regulation (Packaging Instructions 968 – 970)

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Ocean Transportation

All GP Batteries International Ltd lithium coin cells/batteries can be transported as Non-Dangerous Goods by vessel as these articles satisfy with SP188 of IMO-IMDG Code.

Air Transportation

GP Batteries International Ltd Lithium cells/batteries can meet the requirement of IATA Dangerous Goods Regulations 61st Edition of 2020 Packing Instruction PI 968 - 970.

Proper Shipping Name : Lithium Metal Batteries

UN Number : UN3090 (When cell/batteries contained in equipment / packed with equipment, it is UN3091)

Hazard Classification : Class 9 (Miscellaneous)

IATA DGR 61st Edition, Packing Instruction (PI)	Packing Instruction (PI) brief description
PI 968 Section IA	Cells, Cargo Aircraft only; net quantity per package Max. 35kg
PI 968 Section IB	Cells, Cargo Aircraft only; net quantity per package Max. 2.5kg
PI 968 Section II	Cells, Cargo Aircraft only, not more than one package in any single consignment; net quantity per package Max. 2.5kg
PI 969 Section II	Cells packed with equipment
PI 970 Section II	Cells contained in equipment, button cell batteries

1. For cells, the lithium content cannot be more than 0.3g for PI 968 Section II, not more than 1.0g for PI 968 Section IB, and can be more than 1.0g for PI 968 Section IA.
2. Each cell is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, sub-section 38.3.
3. Each cell is manufactured in good qualification factory.

Model	Weight of battery (in g)	Lithium content (in g)
CR1025	0.6	0.010
CR2320	3.0	0.038
CR2330	4.0	0.076
CR2354	6.9	0.150
CR2477	10.5	0.265
CR3032	6.8	0.133

Section 15 – Regulatory Information

Special requirement be according to the local regulations.

Major applicable regulations for transportation are listed below:

- Technical Instructions for the Safety Transport of Dangerous Goods by Air, 2019-2020 Edition
- IATA Dangerous Goods Regulations 63rd Edition (IATA DGR)
- IMO International Maritime Dangerous Goods Code 2018 Edition (IMO, IMDG Code)

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Section 16 – Other Information

The data in this Material Safety Data Sheet relates only to the specific material designated herein. However, the data is provided without any warranty; expressed or implied, regarding its correctness or accuracy. It is the user's responsibility to assume liability on loss, injury, damage, or expense resulting from improper use of this product. We urge you to make this information available as appropriate in your organization and to any others with whom you arrange to handle this product.

In California only, packages that contain CR Li coin cells and the Owner's/Operation Instructions of Products that contains CR Coin cells must include 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