

GP Batteries

Material Safety Data Sheet for Lithium coin cell

Document Number: MCRA100

Revision: 28

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The batteries are exempt articles and are not subject to the OSHA Hazard Communication Standard Requirement. This sheet is only provided as technical information and is referred normal use of the product in question. Peak Power makes no warranty expressed or implied.

Section 1 - Identification

Manufacturer's Name GPI International Ltd.	Emergency Telephone Number
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 852-2484-3333
	Date of prepared and revision Jan 1, 2018
	Signature of Prepare (optional)

Section 2 – 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, or fire and cause human injury or equipment trouble. Please strictly observe safety instructions.

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

Section 3 – Composition/Information On Ingredients

Hazardous Components:

Description:	CAS Number	Approximate % of total weight
Lithium or Lithium Alloy	7439-93-2	1 to 5
Manganese Dioxide	1313-13-9	15 to 40
Propylene Carbonate	108-32-7	2 to 6
1,2-Dimethoxyethane	110-71-4	1 to 5
Lithium Perchlorate	7791-03-9	0 to 1.5
Graphite	7782-42-5	1 to 4
SVHC Substances according to REACH (Article 33) 1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME) ^a	110-71-4	>0.1

^aRemark: According to REACH Regulation Article 7(2) for SVHC present in articles, there is no obligation to notify because the substance EGDME has been registered in ECHA and it is excluded exposure to humans or the environment inside the battery during normal or reasonably foreseeable conditions of use and disposal. GP Lithium metal battery complies with REACH Regulation.

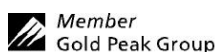
*) Lithium content for each cell

Model	Li content(g)	Model	Li content(g)
CR927	0.009	CR2016	0.023
CR1025	0.010	CR2025	0.048
CR1216	0.0068	CR2032	0.065
CR1220	0.011	CR2354	0.145
CR1616	0.014	CR2430	0.090
CR1620	0.020	CR2450	0.162
CR1632	0.038	CR2477	298

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.



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Skin	Immediately flush skin with 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

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 7 – 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.

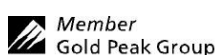
Do not breathe cell vapors or touch internal material with bare hands.

The cells and batteries shall not be stored in high temperature ,the maximum temperature allowed is 60°C for a short period during the shipment , Otherwise the cells maybe leakage and can result in shortened service life..

Section 8– Exposure Controls / Person Protection

Occupational Exposure Limits:	LTEP	STEP
	N.A.	N.A.
Respiratory Protection (Specify Type)	N.A.	
Ventilation	Local Exhausts	Special
	Mechanical (General)	Other
Protective Gloves	N.A.	Eye Protection
Other Protective Clothing or Equipment	N.A.	
Work / Hygienic Practices	N.A.	

Section 9 - Physical / Chemical Properties



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Boiling Point N.A.	Specific Gravity (H ₂ O=1) N.A.
Vapor Pressure (mm Hg) N.A.	Melting Point N.A.
Vapor Density (AIR=1) N.A.	Evaporation Rate (Butyl Acetate) N.A.
Solubility in Water N.A.	
Appearance and Odor Coin Shape, odorless	

Section 10 – Stability and Reactivity

Stability	Unstable		Conditions to Avoid
	Stable	X	

Incompatibility (Materials to Avoid)

Hazardous Decomposition or Byproducts

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section 11 – Toxicological Information

Route(s) 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 vapors may cause irritation of the upper respiratory tract and lungs.

Section 12 – Ecological Information

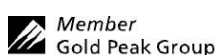
N.A.

Section 13 – Disposal Considerations

Dispose of batteries according to government regulations.

Section 14 – Transportation Information

UN Number: UN 3090						
UN Proper Shipping Name: Lithium metal batteries						
UN: The Transport of Dangerous Goods, Manual of Tests and Criteria 38.3 Lithium batteries						
Shipping	Regulation	Packing	Limit of Aggregated	Transport	Environmental	Special



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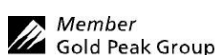
mode/ Country		Group/Special Provision	Lithium Content	Hazard Class	Hazards	Precautions	
USA	US DOT 49 CFR Section 173-185 Lithium batteries and cells		>1 g (cell)/2 g (battery)	Dangerous goods, Class 9	No marine pollutant	Lithium handling label needed	
			<=1 g (cell)/2 g (battery)	Non-dangerous goods			
Air	ICAO/IATA DGR 59 th edition 2018	- PI 968 Section IA	>1 g (cell)/2 g (battery)	Dangerous goods, Class 9	No marine pollutant	DG Label, CAO Label needed	
		- PI 968 Section IB	<=0.3 g, 0.3-1 g (cell); <=0.3 g, 0.3-2 g (battery) (for that exceed allowance in Section II)	Dangerous goods, Class 9			Lithium handling label, DG label, CAO label needed
		- PI 968 Section II	<=0.3 g, 0.3-1 g (cell) <=0.3 g, 0.3-2 g (battery) (Only allow one package prepared per consignment)	Partially- regulated dangerous goods			
Sea	IMO/IMDG CODE 38-16	P903 SP188	>1 g (cell)/2 g (battery)	Dangerous goods, Class 9	No marine pollutant	Lithium handling label needed	
			<=1 g (cell)/2 g (battery)	Non-dangerous goods			Lithium handling label needed
Road	ADR	P903, P903a, P903b	>1 g (cell)/2 g (battery)	Dangerous goods, Class 9	No marine pollutant	Lithium handling label needed	
			<=1 g (cell)/2 g (battery)	Non-dangerous goods			Lithium handling label needed

a) In general, all batteries in all forms of transportation (ground, air, or ocean) 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 outer packaging” that prevents spillage of contents. All original packaging for GP lithium coin cell (sometimes referred to as “Lithium metal battery”) has been designed to be compliant with these regulatory concerns.

Primary (non-rechargeable) lithium metal batteries and cells, (UN 3090), are forbidden for transportation aboard passenger-carrying aircraft. Such batteries transported in accordance with Section IA, IB & II of Packing Instruction 968 must be labeled with the CARGO AIRCRAFT ONLY label.

b) International Maritime Organization (IMO) IMDG Code regulated these products as UN 3090, Lithium metal batteries, Class 9 dangerous goods with Special Provision 188 and 903 assigned.

c) All batteries by our company, including single cells with lithium content less than 1g or battery pack models with lithium



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content less than 2g, conform to special regulation 188 and transport condition defined in IMDG Code. It can be transported as non-dangerous goods.

Transport of Lithium metal batteries contained in equipment or Lithium metal batteries packed with equipment have to follow the appropriate regulations for UN3091, PI970 or PI969 respectively.

Section 15 – Regulatory Information

Special requirement be according to the local regulatory.

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.

Section 17 – 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.
