Section I – Product and Company Identification

Information of Product

Product Identity (Used on the Label)	Lithium Metal Battery

Information of Manufacturer

Manufacturer's Name GPI International Ltd.	**Emergency Telephone Number** Within USA and Canada call: +1-800-424-9300 Outside USA and Canada call: +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** +852-2484-3333
	Date of prepared and revision Feb 03, 2016

Section II – Hazards Identification

GHS Classification: N.A.

Under normal conditions of use, the battery is hermetically sealed. If the electrolyte is leaked, hazardous material may be released.

Human Health Effects

Inhalation	The electrolyte inhalation can cause respiratory irritation. It could be possibly carcinogen.
Skin contact	The electrolyte can cause skin irritation.
Eye contact	The electrolyte leaked from the battery cell can cause severe irritation.
Ingestion	If the battery is swallowed and opened, or the electrolyte is ingested, the electrolyte irritates the mouth and the throat seriously, may lead to vomiting, nausea, hematemesis, stomach pains and diarrhea.

Environmental Effects
The battery cell remains in the environment. Do not throw it out into the environment.

Specific Hazards
As previously described.

Section III – Composition/Information on Ingredients

Chemical Name/Common Name	CAS No.	Approximate % of total weight

Lead	7439-92-1	0
Mercury	7439-97-6	0
Cadmium	7440-43-9	0
Lithium	7439-93-2	~2Wt%
Manganese Dioxide	1313-13-9	~31Wt%
Graphite	7782-42-5	~3Wt%
Iron	7439-89-6	~55Wt%
Organic electrolyte	N.A.	~8wt%
Polypropylene	9003-07-0.	~1wt%

Section IV – First-aid Measures

Inhalation	If electrolyte vapors are inhaled, remove from exposure and provide fresh air, seek medical attention if respiratory irritation develops. Ventilate the contaminated area.
Skin Contact	If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately. Remove contaminated clothing and wash before reuse. In severe cases obtain medical attention.
Eye Contact	If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) minutes, and contact a physician.
Ingestion	Wash out mouth thoroughly with water and give plenty of water to drink. Obtain medical attention.

Section V – Fire-fighting Measures

Although a battery cell is not flammability, in case of fire, move it to the safe place quickly.

The following measures are taken when it cannot be moved.

Extinguishing Media	Carbon Dioxide, Dry Chemical or Foam extinguishers
Unusual Fire and Explosion Hazards	Do not dispose of battery in fire - may explode. Do not short-circuit battery - may cause burns.
Special Protective equipment and Precautions for fire-fighters	N/A

Section VI – Accidental Release Measures

Personal Precautions, protective equipment, emergency procedures	Cells 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). If the skin has come into contact with the electrolyte, it should be washed thoroughly with water.

Environmental precautions	Do not throw out into the environment.
Containment and Clean Up	Sand or earth should be used to absorb any exuded material. Seal leaking battery and contaminated absorbent material in plastic bag and dispose of as Special Waste in accordance with local regulations.

Section VII – Handling and Storage

Precautions for Safe Handling	Batteries should be handled carefully to avoid short circuits. Never disassemble a battery. Do not breathe cell vapors or touch internal material with bare hands.
Conditions for Safe Storage	Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries. The cells and batteries shall not be stored in high temperature , the maximum temperature allowed is 60℃ for a short period during the shipment , Otherwise the cells maybe leakage and can result in shortened service life.

Section VIII – Exposure Controls/Personal Protection

Exposure Control Limit

Common Chemical Name / General Name	OSHA PEL	ACGIH TLV
Aluminum metal (as Al)	TWA 15 mg/m^3 (total) TWA 5 mg/m^3 (resp)	-
Cobalt metal (As Co)	TWA 0.1 mg/m^3	TWA 0.02 mg/m^3
Lithium Hydroxide	-	-
Manganese compounds (as Mn)	(Celling) 5 mg/m^3	TWA 0.02 mg/m^3 (resp.)
Nickel, metal and insoluble compounds	(as Ni) TWA 1 mg/m^3	Elemental: 1.5mg/m^3 (IHL); Insoluble inorganic compounds: 0.2mg/m^3 (IHL)

Engineering Control

No engineering measure is necessary during normal use. In case of internal leakage of cell materials, operate the local exhaust or enhance ventilation
The contents of cell are hermetically sealed.

Personal Protection

Respiratory protection: Protective mask
Hand protection: Protective gloves
Eye protection: Protective glasses designed to protect against liquid splashes
Skin and body protection: Working clothes with long sleeve and long trousers

Section IX – Physical and Chemical Properties

Appearance Coin Shape, silver	**Odor** odorless **Odor Threshold** N/A
pH N/A	**Melting point/freezing point** N/A
Initial boiling point and boiling range N/A	**Flash point** N/A
Evaporation rate N/A	**Flammability (solid, gas)** N/A **Upper/lower flammability or explosive limits** N/A
Vapor pressure N/A	**Vapor density** N/A
Relative density N/A	**Solubility** N/A
Partition coefficient: n-octanol/water N/A	**Auto-ignition temperature** N/A
Decomposition temperature N/A	**Viscosity** N/A

Section X – Stability and Reactivity

Reactivity	N/A
Chemical stability	Stable under normal use
Possibility of hazardous reactions	By misuse of a battery cell or the like, gas accumulates in the cell and the internal pressure rises. These gases may be emitted through the gas release vent. When fire is near, these gases may take fire. When a battery cell is heated strongly by the surrounding fire, acrid or harmful fume may be emitted

Conditions to avoid	Direct sunlight, high temperature and high humidity

Materials to avoid	Conductive materials, water, seawater, strong oxidizers and strong acids
Hazardous decomposition products	Acrid or harmful fume is emitted during fire.

Section XI – Toxicological Information

There is no toxicity data for Lithium Metal Battery. Under normal conditions of use, the battery is non-toxic.

Section XII – Ecological Information

Persistence/degradability :

Since a battery cell and the internal materials remain in the environment, do not bury or throw out into the environment.

Section XIII – Disposal Considerations

Recommended methods for safe and environmentally preferred disposal :

Product (waste from residues)

Do not throw out a used battery cell. Recycle it through the recycling company.

Contaminated packaging

Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cell contaminates them, dispose them as industrial wastes subject to special control.

Section XIV – Transport Information

Regulatory Body	Special Provisions
ADR	P903，P903a，P903b
IMO	UN 3090， SP118， SP230，SP903
UN	UN 3090
US DOT	49 CFR section 173.185
IATA	PI968

UN No.	UN Proper Shipping Name	Shipping modes	Regulations	Packing instructions	Limit of Aggregated lithium content	Transport Hazard Class	Lithium handling label
UN3090	BATTERY containing lithium	USA	US Department of Transportation of Hazardous Substances (HMR) 49 CFR section 173.185		1 g (cell)/2 g (battery)	9	Needed
		Air	ICAO/IATA DGR 57th edition	PI968 Section II	< 0.3 g (cell/battery)	9	Needed
		Sea	IMO/IMDG Code 35-10	SP118 SP230 SP903	1 g (cell)/2 g (battery)	9	Needed
		Road/Rail	ADR / RID	P903 P903a P903b	1 g (cell)/2 g (battery)	9	Needed

Section XV – Regulatory Information

Special requirement be according to the local regulatory.

Section XVI – Other Information

The data in this Safety Data Sheet relates only to the specific material designated herein.