

GP Batteries

Material Safety Data Sheet

Model No.: All Li-ion Rechargeable Cells

Document Number: YRI0166

Revision: 03

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IDENTITY (As Used on Label and List) Lithium Ion cell	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.
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Section I – Information of Manufacturer

Manufacturer's Name GPI International Ltd.	Emergency Telephone Number
Address (Number, Street, City State, and ZIP Code) 8/F GP Building, 30 Kwai Wing Road,	Telephone Number for information 852-2484-3333
Kwai Chung, N.T. H.K.	Date of prepared and revision Nov 13, 2007
	Signature of Preparer (optional)

Section II - Hazardous Ingredients / Identity Information

Hazardous Components:

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A) The content of elements are based on homogeneous materials level of Li-ion cell:

Element	Lead	Cadmium	Hexavalent Chromium (Cr ⁶⁺)	Mercury	Polybrominated Biphenyls (PBBs)	Polybrominated Diphenyls Ethers (PBDEs)
Limit (mg/kg)	<200	<50	<200	<200	<200	<200

B) The content of elements are based on total weight of Li-ion cell:

Element	Lead	Cadmium	Mercury
Limit (mg/kg)	<40	<20	<5

Element	Organic solvent				
Limit (wt%)	<15%				

Section III - Physical / Chemical Characteristics

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	Cylindrical Shape, odorless

Section IV – Hazard Classification

Classification

N.A.



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Section V – Reactivity Data

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 VI - Health Hazard Data

Route(s) of Entry	Inhalation?	Skin?	Ingestion?
	N.A.	N.A.	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 VII – First Aid Measures

First Aid Procedures

If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately.

If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) minutes, and contact a physician.

If electrolyte vapors are inhaled, provide fresh air and seek medical attention if respiratory irritation develops. Ventilate the contaminated area.

Section VIII - Fire and Explosion Hazard Data

Flash Point (Method Used)	Ignition Temp.	Flammable Limits	LEL	UEL
N.A.	N.A.	N.A.	N.A.	N.A.

Extinguishing Media

Carbon Dioxide, Dry Chemical or Foam extinguishers can be used for battery BUT water extinguisher is not suitable.

Special Fire Fighting Procedures

N.A.

Unusual Fire and Explosion Hazards

Do not dispose of battery in fire - may explode.

Do not short-circuit battery - may cause burns.

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Section IX – Accidental Release or Spillage

Steps to Be Taken in Case Material is Released or Spilled

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).

Section X – Handling and Storage

Safe handling and storage advice

Cells 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 cells.

Never disassemble a battery.

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

Keep cells between -20°C and 35°C for prolong storage.

When the cells are closed to fully charged, the storage temperature should be between -20°C and 30°C and should be controlled at 10-20°C during transportation and packed with efficient air ventilation.

Section XI – Exposure Controls / Person Protection

Occupational Exposure Limits: LTEP

N.A.

STEP

N.A.

Respiratory Protection (Specify Type)

N.A.

Ventilation

Local Exhausts

N.A.

Special

N.A.

Mechanical (General)

N.A.

Other

N.A.

Protective Gloves

N.A.

Eye Protection

N.A.

Other Protective Clothing or Equipment

N.A.

Work / Hygienic Practices

N.A.

Section XII – Ecological Information

N.A.

Section XIII – Disposal Method

Dispose of cells according to government regulations.



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Section XIV – Transportation Information

All GP lithium ion cells comply with the necessary testing requirements under the UN Manual of Tests and Criteria as referenced in the following transportation regulations:

1. UN Recommendations on the Transport of Dangerous Goods Model Regulations
2. U.S. Department of Transportation hazardous materials regulations (HMR),
3. International Civil Aviation Organization (ICAO) Technical Instructions,
4. International Air Transport Association (IATA) Dangerous Goods Regulations, and
5. International Maritime Dangerous Goods (IMDG) Code.

GP Cells are exempted from these regulations since they meet all UN Testing requirements and contain no more than 8 grams of equivalent lithium content. (See 49 CFR 173.185 of the U.S. HMR, Special Provision A45 of the ICAO Technical Instructions and IATA Dangerous Goods Regulations, and Special Provision 188 of the IMDG Code and UN Model Regulations.)

Equivalent Lithium Content Calculation:

Under the UN Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.3), to determine the equivalent lithium content of a lithium ion cell (and battery), multiply the rated capacity in ampere-hours of each cell by 0.3. (Under this formula, every ampere-hour in a lithium ion cell would be equivalent to 0.3 grams of lithium metal.)

GP Cells contain less than 1.5g equivalent lithium content.

Cells should be packaged in accordance with these transportation regulations. It is especially important to ensure that cells are packed in such a way to prevent short circuits.

Non-dangerous goods.

Section XV – Regulatory Information

Special requirement be according to the local regulatory.

Section XVI – Other Information

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

Section XVII – Measures for fire extinction

In case of fire, it is permissible to use Carbon Dioxide, Dry Chemical or Foam extinguishers on these cells or their packing material. Cool exterior of cells if exposed to fire to prevent rupture.

Fire fighters should wear self-contained breathing apparatus.
