

# GP Batteries

## Material Safety Data Sheet For NiMH Batteries

Document Number: RRS0541

Revision: 09

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IDENTITY (As Used on Label and List) Nickel Metal Hydride 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.
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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, Kwai Chung, N.T. H.K.	Telephone Number for information 852-2484-3333
	Date of prepared and revision 16th Feb 2011
	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 NiMH battery:

Element	Lead	Cadmium	Hexavalent Chromium (Cr <sup>6+</sup> )	Mercury	Polybrominated Biphenyls (PBBs)	Polybrominated Diphenyls Ethers (PBDEs)
Limit (mg/kg)	<1000	<100	<1000	<1000	<1000	<1000
CAS no.	7439-92-1	7440-43-9	18540-29-9	7439-97-6	59536-65-1	---

B) The content of elements are based on total weight of NiMH battery:

Element	Lead	Cadmium	Hexavalent Chromium (Cr <sup>6+</sup> )	Mercury	Polybrominated Biphenyls (PBBs)	Polybrominated Diphenyl Ethers (PBDEs)
Limit (mg/kg)	<40	<20	<5	<5	Nil	Nil

Element	Ni(OH) <sub>2</sub> (Nickel Hydroxide)	30% KOH Solution (Potassium Hydroxide)	30% NaOH Solution (Sodium Hydroxide)	Non-Hazardous Materials
Limit (wt%)	<30%	<20%	<20%	<30%
CAS no.	12054-48-7	1310-58-3	1310-73-2	---

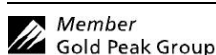
### Section III - Physical / Chemical Characteristics

Boiling Point N.A.	Specific Gravity (H <sub>2</sub> 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.



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

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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

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 X – 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 cycle life.

### Section XI – Exposure Controls / Person Protection

Occupational Exposure Limits:	LTEP	STEP
	N.A.	N.A.
Respiratory Protection (Specify Type)	N.A.	
Ventilation	Local Exhausts	Special
	N.A.	N.A.
	Mechanical (General)	Other
	N.A.	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 batteries according to government regulations.

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### Section XIV – Transportation Information

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 nickel metal hydride batteries has been designed to be compliant with these regulatory concerns.

GP nickel metal hydride batteries (sometimes referred to as “Dry cell” batteries) are not defined as dangerous goods under the IATA Dangerous Goods Regulations. ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations as they are compliant with the requirements contained in the following special provisions.

Regulatory Body	Special Provisions
ADR	295 – 304, 598
IMDG	UN 3028 Provisions 295 – 304
UN	UN 3028 Provisions 295 – 304
US DOT	49 CFR 172, 102 Provision 130
IATA	A123
ICAO	UN 3028 Provisions 295 – 304

In addition, the IATA Dangerous Goods Regulations and ICAO Technical Instructions require the words “not restricted” and the Special Provision number A123 be provided on the air waybill, when an air waybill is issued.

### 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 batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.

Fire fighters should wear self-contained breathing apparatus.