

Model No.: GN1604S

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IDENTITY (As Used on Label and List) GN1604S	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 I – Information of Manufacturer				
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,	Telephone Number for information 852-2484-3333			
New Territories, Hong Kong	Date of prepared and revision			
Issue Date Jan 17,2017	Signature of Preparer (optional)			

## Section II - Hazardous Ingredients / Identity Information

Hazardous Components:

Description:	Approximate % of total weight		Remarks
Mercury (Hg)	<1.0	ppm	Impurity
Lead (Pb)	<1000	ppm	Added in Zinc plate
Cadmium (Cd)	<10	ppm	Impurity
Hexavalent Chromium (Cr <sup>6+</sup> )	<10	ppm	Impurity
Polybrominated Biphenyls (PBBs)	N/A		
Polybrominated Diphenyl Ethers (PBDEs)	N/A		
Zinc Chloride (ZnCl <sub>2</sub> )	2-10	Wt%	
Ammonium Chloride (NH <sub>4</sub> Cl)	0-10	Wt%	
Manganese Dioxide (MnO <sub>2</sub> )	25-35	Wt%	
Zinc (Zn)	10-20	Wt%	
Acetylene Black	5-15	Wt%	

#### Section III - Physical / Chemical Characteristics

Boiling Point	Specific Gravity (H <sub>2</sub> O=1)	
N.A.		N.A.
Vapor Pressure (mm Hg)	Melting Point	
N.A.		N.A.
Vapor Density (AIR=1)	Evaporation Rate (Butyl Acetate)	
N.A.		N.A.
Solubility in Water		

N A

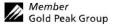
N.A Appearance and Odor

Prismatic Shape, odorless

### Section IV - Hazard Classification

Classification

N.A.





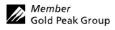
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Section V – Reactivity Data					
Stability Unstable Conditions to Avoid					
Stable X					
Incompatibility (Materials to Avoid)					
Hazardous Decomposition or Byproducts					
Hazardous Polymerization May Occur Conditions to Avoid					
Will Not Occur X					
Section VI - Health Hazard Data					
Route(s) of Inhalation? Skin? Ingestion?					
Entry N.A. N.A. N.A.					
Health Hazard (Acute and Chronic) / Toxiclogical 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.					
Extinguishing Media					
Carbon Dioxide, Dry Chemical or Foam extinguishers					
Special Fire Fighting Procedures					
N.A.					
N.A.					
Unusual Fire and Explosion Hazards					

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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.

Keep batteries between -30°C and 35°C for prolong storage.

### Section XI – Exposure Controls / Person Protection

**Engineering Control** 

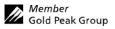
No engineering measure is necessary during normal use. If internal cell materials are leaked, the information below will be useful.

#### **Exposure Control Limit**

Common Chemical Name /	OSHA PEL	ACGIH TLV	
General Name			
Manganese compounds	(Celling) 5 mg/m <sup>3</sup>	TWA 0.02 mg/m³ (resp.)	
(as Mn)			
Nickel, metal and insoluble	(as Ni) TWA 1 mg/m <sup>3</sup>	Elemental: 1.5mg/m³ (IHL);	
compounds		Insoluble inorganic compounds:	
		0.2mg/m³ (IHL)	
Zinc oxide	Respirable fraction:	Respirable fraction:	
	5 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	
Graphite	Respirable fraction:	2 mg/m³ (all	
	5 mg/m <sup>3</sup>	forms except	
	J	fibers)	
Carbon black	3.5 mg/m <sup>3</sup>	3.5 mg/m³ (IHL)	
TWA – Time Weighted Average ACGIH TLV: American Conference of Governmental Industrial Hygienists Threshold Limit Value OSHA PEL: Occupational Safety & Health Administration Permissible Exposure Limit			

### Section XII - Ecological Information

N.A





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### Section XIII - Disposal Method

Dispose of batteries according to government regulations.

#### Section XIV – Transportation Information

GP primary carbon zinc cylindrical cells/batteries are considered to be "dry cell" batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civic Aviation Administration (ICAO), International Air Transport Association (IATA), the International Maritime Organization (IMO). (Carbon zinc batteries are not regulated for transportation as "DANGEROUS GOODS" under the IATA Dangerous Goods Regulations 58<sup>th</sup> edition 2017.)

IATA DGR: Special Provision A123: "Example of such batteries are: akali-manganese, zinc carbon. and nickel-cadmium batteries. Any electrical battery...having the potential of a dangerous evolution of heat must be prepared for transport as to prevent (a) a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals.) is forbidden from transport; and (b) accidental activation. The words "Not Restricted" and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6 when an Air Waybill is issued

EU: As primary carbon zinc cells/batteries are not explicitly mentioned in RID/ADR, there are no special Dangerous Goods shipment requirements for these products.

USA: 49 CFR § 172.102 Special Provision 130: "For other than dry battery specifically covered by another entry in the § 172.101 Table, "Batteries, dry" are not subject to the requirements of this subchapter when they are securely packaged and offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals) and protects against short circuits."

#### Section XV – Regulatory Information

Special requirement be according to the local regulatories.

#### 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 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.

