Material Safety Data Sheet for Mercury and lead free Manganese Dioxide Button Cell

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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 GP Batteries 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 June 14, 2016
	Signature of Preparer (optional)

Section II - Hazardous Ingredients/Identity Information

Hazardous Components

Description:	CAS#	EINECS NO.	Approximate % of total weight
Manganese dioxide	1313-13-9	215-202-6	~32 %
Zinc	7440-66-6	231-175-3	~10%
Mercury	7439-97-6	231-106-7	0
Lead	7439-92-1	231-106-7	0
Cadmium	7440-43-9	231-152-8	0
Potassium Hydroxide and Sodium Hydroxide	\	\	~4 %
Distilled Water	7732-18-5	\	~6%
Iron	7439-89-6	\	~46%
Others	\	\	Balance

Section III – Physical/Chemical Characteristics

Form N.A.	Specific Gravity (H2O =1) N.A.
Boiling Point N.A.	Melting Point
Vapor Pressure (mm Hg) N.A.	Evaporation Rate (Buty1 Acetate=1) N.A.
Vapor Density (AIR=1) N.A.	pH N.A.
Solubility in Water N.A.	Appearance and Odor N.A.

Section IV-Hazard Classification

N.A.

Section V – Reactivity Data

Stability Yes= (X)	Unstable ( )	Conditions to Avoid
	Stable (X)	

Incompatibility (Materials to Avoid)

Hazardous Decomposition or By products

When heated, battery may emit hazardous vapour of KOH / NaOH

Hazardous Reactions Yes = (X)	May Occur ( )	Conditions to Avoid
	Will Not Occur (X)	

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Section VI – Health Hazard Data

Route(s) of Entry Yes = (X)	Inhalation?	Skin?	Ingestion?
	(N.A.)	(N.A.)	(N.A.)

Health Hazard (Acute and Chronic) / Toxicological in formation

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

Firs 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 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

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.

Section IX – Accidental Release or Spillage

Steps to Be Taken in Case Material is Released or Spilled

Batteries that are leaking 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 – Handing and Storage

Safe handing 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.

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Section XI – Exposure Controls / Personal 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 batteries according to government regulations.

Section XIV – Transportation Information

GP batteries are considered to be “Dry cell” batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO), International Air Transport Association (IATA) Dangerous Goods Regulations 57th edition and International Maritime Dangerous Goods Regulations (IMDG). The only DOT requirement for shipping these batteries is special provision 130 which states: “Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (For example, by the effective insulation of exposed terminals). The only requirements for shipping these batteries by ICAO and IATA is Special Provision A123 which states: "An electrical battery or battery powered device having the potential of dangerous evolutions of heat that is not prepared so as to prevent a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals) is forbidden from transportation." The international Maritime Dangerous Goods Code (IMDG) regulate them for ocean transportation under Special Provision 304 which says : Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to the provision of this Code provided the batteries are securely packed and protected against short-circuits. Example of such batteries is: alkali-manganese, zinc-carbon, and nickel metal hydride and nickel-cadmium batteries. Non-dangerous goods.

Such battery has been packed in inner packaging in such a manner as to effectively prevent short circuit and movement that could lead to short circuit.

Section XV – Regulatory Information

Special requirement be according to the local regulatory.

Section XVI – Other Information

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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.

GP Part No	Model No.	IEC
A76F	A76	LR44
162F	162	LR58
164F	164	LR621
171F	171	LR69
177F	177	LR626
186F	186	LR1142
189F	189	LR54
191F	191	LR1120
192F	192	LR41
193F	193	LR754
PX625AF	PX625A	LR9
10AF	10A	\
11AF	11A	\
23AF	23A	\
29AF	29A	\
26AF	26A	\
27AF	27A	\
175F	175	5LR44
476AF	476A	4LR44
220AF	220A	10F15