GP Batteries

Material Safety Data Sheet for Manganese Dioxide Button 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.

Section I- Information of Manufacturer

Manufacturer's Name Ningbo Biba Energy Co.,Ltd.	Emergency Telephone Number
Address (Number, Street, City, State, and ZIP Code) 58 Zhongche Road, Wuxiang Township, Yinzhou District, Ningbo, China	Telephone Number for information 0574-2788-0826
	Date of prepared and revision ***January 7, 2022***
	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	~30%
Zinc	7440-66-6	231-175-3	~10%
Mercury	7439-97-6	231-106-7	~0.3%
Lead	7439-92-1	231-106-7	0.0066%
Cadmium	7440-43-9	231-152-8	0
Potassium Hydroxide and Sodium Hydroxide	\	\	~4%
Distilled Water	7732-18-5	\	~7%
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 and Hg

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

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.

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 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 –Toxicological Information

Toxicological data: N.O. N.E

Section XIII – Ecological Information

N.A.

Section XIV– Disposal Method

Dispose of batteries according to government regulations.

Section XV – 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 alkaline batteries has been designed to be compliant with these regulatory concerns.

Alkaline batteries (sometimes referred to as “Dry cell” batteries) are not listed as dangerous goods under the ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road, the IMDG International Maritime Dangerous Goods Code, UN Dangerous Good Regulations, IATA Dangerous Goods Regulations ***63***th edition, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions

. **Regulatory Body**	**Special Provisions**
ADR	Not regulated
IMDG	Not regulated
UN	Not regulated
US DOT	49 CFR 172.102 Provision 130
IATA	A123
ICAO	Not regulated

All GP alkaline batteries are packed in such a way to prevent short circuits or the generation dangerous quantities of heat and meet the special provisions listed above. 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 XVI – Regulatory Information

Special requirement be according to the local regulatory.

Section XVII – Other Information

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

Section XVIII – 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.

Model No.	IEC
A76 / A76P	LR44
162	LR58
164	LR621
171	LR69
177	LR626SW
186	LR1142
189	LR54
189E	LR54
191	LR1120
192	LR41
PX625A	LR9
10A	\
11A	\
23A	\
23AE / 23AL	\
29A	\
26A	\
27A	\
476A	4LR44
220A	10F15

第一部分 – 制造商信息

制造商名称	紧急情况联系电话
宁波必霸能源有限公司	
地址（门牌号， 街道， 城市， 州县， 邮政编码）	联系电话
中国宁波鄞州区五乡镇中车路58号	0574-2788-0826
	修订日期
	2022年1月7日
	修订人签名（可选）

第二部分 – 危险成份信息

描述	CAS#	EINECS NO.	占电池重量%
二氧化锰	1313-13-9	215-202-6	~30%
锌	7440-66-6	231-175-3	~10%
汞	7439-97-6	231-106-7	~0.3%
铅	7439-92-1	231-106-7	0.0066%
镉	7440-43-9	231-152-8	0
氢氧化钠，氢氧化钾	\	\	~4%
去離子水	7732-18-5	\	~7%
鐵料	7439-89-6	\	~46%
其它	\	\	餘額

第三部分 – 物理/化学特性

形态 N.A.	比重 (水 =1) N.A.
沸点 N.A.	熔点 N.A.
蒸汽压力 (mm Hg) N.A.	蒸发率 (醋酸盐=1) N.A.
相对密度 (空气=1) N.A.	PH值 N.A.
溶解性 N.A.	外观和气味 N.A.

第四部分 – 危险分级

N.A.

第五部分 – 反应资料

稳定性 是= (X)	不稳定 ( )	避免环境
	稳定 (X)	

不兼容 (避免物质)

有害分解物或副产品

当受热时，电池会释放出KOH / NaOH 和汞蒸汽

危险反应 是 = (X)	会发生 ( )	避免环境
	不会发生 (X)	

第六部分 – 健康危害数据

侵入途径 是 = (X)	吸入	皮肤	食入
	(N.A.)	(N.A.)	(N.A.)

健康危害(急性和慢性) / 毒理学构成

如电解液泄漏， 皮肤接触电解液会发痒。

第七部分 – 急救措施

急救程序

如电解液发生泄漏，皮肤接触，立即用水冲洗。

如电解液接触眼睛， 用大量水冲洗十五分钟， 就医。

第八部分 – 消防和燃爆数据

闪点	燃点	易燃度	下限	上限
N.A.	N.A.	N.A.	N.A.	N.A.

灭火方法
N.A.

特别灭火程序
N.A.

不寻常燃烧及爆炸之危害

勿弃于火中 – 会爆炸。

勿使电池短路 – 可能导致灼伤。

第九部分 – 意外泄漏

如遇泄漏采取的步骤

电池漏液时应佩戴橡胶手套进行处置。

避免直接接触电解液。

第十部分 – 操作和储存

安全操作和储存建议

电池对潮湿的不利影响非常敏感。应确保储存在干燥且温差小的地方。 勿靠近锅炉和散热器， 勿暴露于太阳直射处。 勿丢弃于火中。勿给电池充电。勿使电池短路。勿将电池方向装反。 勿使电池混乱摆放， 或与金属对象混合储存。勿拆开电池， 因为可能导致电池爆炸，漏液或伤害。

第十一部分 – 暴露控制 / 个人防护

职业暴露限值：	下限 N.A.	上限 N.A.	
呼吸系统防护	N.A.		
通风	地区性排气 N.A.	特别 N.A.	
	机械 N.A.	其它 N.A.	
手防护	N.A.	眼睛防护 N.A.	
其它防护服或设备	N.A.		
工作/卫生惯例	N.A.		

第十二部分 – 毒理学信息

毒理学资料： N.O. N.E.

第十三部分 – 生态学信息

N.A.

第十四部分 – 废弃方法

依照政府法规进行处置

第十五部分 – 运输信息

通常而言所有电池无论是空运、海运、车运均须以安全合理的形式进行包装，所有包装均须包装坚固而预防电池短路、预防电池散落，所有GP碱性扣式电池的包装设计制作均符合此要求。

GP碱性扣式电池是干电池，它不属于美国运输部、国际民航组织、国际航空运输协会（***63***版本）、国际海运危险货物运输规则等等条款的限制范围。

. **Regulatory Body**	**Special Provisions**
ADR	Not regulated
IMDG	Not regulated
UN	Not regulated
US DOT	49 CFR 172.102 Provision 130
IATA	A123
ICAO	Not regulated

所有GP碱性扣式电池的包装均可满足预防短路防止发热变形的要求，国际航空运输协会、国际民航组织均有说明"不受限制"，

第十六部分 – 调整信息

依照当地特殊要求调整。

第十七部分 – 其它信息

本材料安全数据表的数据仅针对此指定的材料。

第十八部分 – 灭火方法

如发生燃烧，允许使用任意类性的灭火媒体， 如电池暴露于火中，为避免爆裂可冷却电池表面。

灭火人员应佩戴呼吸器。

本文覆盖以下型号电池：

Model No.	**IEC**
A76 / A76P	LR44
162	LR58
164	LR621
171	LR69
177	LR626SW
186	LR1142
189	LR54
189E	LR54
191	LR1120
192	LR41
PX625A	LR9
10A	\
11A	\
23A	\
23AE / 23AL	\
29A	\
26A	\
27A	\
476A	4LR44
220A	10F15