GP Batteries

Material Safety Data Sheet for GP 9V Carbon Zinc Battery

IDENTITY (As Used on Label and List) 标识(用于标签和清单) 1604P	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. 注:如有项目不适用或资料不齐全，请在空格内注明。

Section I – Information of Manufacturer
第一部分 - 制造商信息

Manufacturer's Name 制造商的名字 Dongguan GP Batteries Ltd 东莞金山电池有限公司	Emergency Telephone Number (optional) 紧急电话号码(可选)
Address (Number, Street, City State, and ZIP Code) 地址(号码，街道，城市和邮政编码) Room 101, Building 1, No. 2 Yintai Road, Xiegang Town 谢岗镇银泰路2号1号楼101室	Telephone Number for information 咨询电话 +86 769 86960088
Dongguan City, Guangdong, China 中国广东省东莞市	Date of prepared and revision (optional) 编制及修订日期(可选)
Issue Date 发布日期 2025-01-01	Signature of Preparer (optional) 编制人签名(可选)

Section II - Hazardous Ingredients / Ingredient Information
第二部分 - 危险成分/组成信息

Chemical name 化学名称	Concentration or concentration ranges 含量		CAS No. CAS 号	Remarks 备注
Zinc Chloride ($ZnCl_2$) 氯化锌	2-10	Wt%	7646-85-7	
Ammonium Chloride (NH_4Cl) 氯化铵	0-10	Wt%	12125-02-9	
Manganese Dioxide (MnO_2) 二氧化锰	25-35	Wt%	1313-13-9	
Zinc (Zn) 锌	10-20	Wt%	7440-66-6	
Acetylene Black 乙炔黑	5-15	Wt%	1333-86-4	
Water 水	5-10	Wt%	7732-18-5	
Iron 铁	5-8	Wt%	7439-89-6	
Mercury (Hg) 汞	<1.0	ppm	7439-97-6	Impurity 杂质
Lead (Pb) 铅	<1000	ppm	7439-92-1	Added in Zinc plate 锌材料内添加
Cadmium (Cd) 镉	<10	ppm	7440-43-9	Impurity 杂质
Hexavalent Chromium (Cr^{6+}) 六价铬 (Cr^{6+})	<10	ppm	7440-47-3	Impurity 杂质

Section III - Physical / Chemical Characteristics
第三部分 - 物理/化学特性

Boiling Point 沸点 N/A 不适用	Specific Gravity (H_2O=1) 比重(水=1) N/A 不适用
Vapor Pressure (mm Hg) 蒸汽压(mm Hg) N/A 不适用	Melting Point 熔点 N/A 不适用
Vapor Density (AIR=1) 蒸汽密度(空气=1) N/A 不适用	Evaporation Rate (Butyl Acetate) 蒸发速率(乙酸丁酯) N/A 不适用
Solubility in Water 水中的溶解度 N/A 不适用	
Appearance and Odor 外观和气味 Prismatic Shape, odorless 棱柱形，无臭	

Section IV – Hazard Classification
第四部分 - 危险分类

Classification 分类 N/A 不适用

Section V – Stability and Reactivity
第五节 - 稳定性和反应性

Stability 稳定性	Unstable 不稳定		Conditions to Avoid 避免的条件
	Stable 稳定	√	Excessive heat，put into fire, crushed and broken 过热,投入火中，破碎和破裂
Incompatible materials 不相容材料	Acids, Oxidizing agents, Bases 酸，氧化剂，碱		
Hazardous Decomposition or Byproducts 有害分解物或副产品			
Possibility of Hazardous Reactions 危险反应的可能性	May Occur 可能发生		Conditions to Avoid 避免的条件
	Will Not Occur 不会发生	√	None under normal processing 正常处理下没有

Section VI - Health Hazard Data
第六节 - 健康危害数据

Route(s) of Entry 浸入途径	Inhalation? 吸入？	N/A 不适用	Skin? 皮肤？	N/A 不适用	Ingestion? 食入？	N/A 不适用

Health Hazard (Acute and Chronic) / Toxiclogical information
健康危害(急性和慢性)/毒理学信息

In case of electrolyte leakage, skin will be itchy when contaminated with electrolyte.
万一电解液泄漏，皮肤被电解液污染会发痒。

In contact with electrolyte can cause severe irritation and chemical burns.
与电解液接触可引起严重刺激和化学烧伤。

Inhalation of electrolyte vapors may cause irritation of the upper respiratory tract and lungs.
吸入电解质蒸汽可引起上呼吸道和肺部刺激。

Section VII – First Aid Measures
第七节 - 急救措施

First Aid Procedures
急救程序

If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately.
如发生电解液泄漏并与皮肤接触，应立即用大量清水冲洗。

If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) minutes, and contact a physician.
如果电解液接触到眼睛，用大量的水清洗15分钟，并联系医生。

If electrolyte vapors are inhaled, provide fresh air and seek medical attention if respiratory irritation develops. Ventilate the contaminated area.
如果吸入电解液蒸汽，提供新鲜空气，如果出现呼吸道困难，请就医。对污染区域进行通风。

Section VIII - Fire and Explosion Hazard Data
第八部分 - 火灾和爆炸危险数据

Flash Point (Method Used) 闪点(方法)	Ignition Temp. 燃点	Flammability 易燃度	LEL 爆炸下限	UEL 爆炸上限
N/A 不适用	N/A 不适用	N/A 不适用	N/A 不适用	N/A 不适用

Extinguishing Media
灭火剂

Carbon Dioxide, Dry Chemical or Foam extinguishers
二氧化碳，干粉灭火器或泡沫灭火器

Special Fire Fighting Procedures
特殊灭火程度

N/A
不适用

Unusual Fire and Explosion Hazards
异常火灾和爆炸危险

Do not dispose of battery in fire - may explode.
请勿将电池置于火中-可能会爆炸。

Do not short-circuit battery - may cause burns.
不要使电池短路——可能导致灼伤。

Section IX – Accidental Release Measures
第九部分 – 泄露应急处理

Steps to Be Taken in Case Material is Released or Spilled
材料泄漏或溢出时应采取的步骤

Batteries that are leakage should be handled with rubber gloves.
漏液的电池应戴橡胶手套处理

Avoid direct contact with electrolyte.
避免直接接触电解液。

Wear protective clothing and a positive pressure Self-Contained Breathing Apparatus (SCBA).
穿戴防护服和正压自给式呼吸器(SCBA)。

Section X – Handling and Storage
第十部分 – 操作处置和储存

Safe handling and storage advice
安全处理和储存建议

Batteries should be handled and stored carefully to avoid short circuits.
电池应小心搬运和储存，以避免短路。

Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries.
不要乱放，也不要让金属物品和电池混在一起。

Never disassemble a battery.
不要拆卸电池。

Do not breathe cell vapors or touch internal material with bare hands.
不要徒手吸入细胞蒸气或触摸内部材料。

Keep batteries between -30°C and 35°C for prolong storage.
将电池保持在-30°C和35°C之间，以延长储存时间。

Section XI – Exposure Controls / Person Protection
第十一部分 – 接触控制/个体防护

Engineering Control
工程控制

No engineering measure is necessary during normal use. If internal cell materials are leaked, the information below will be useful.
正常使用时不需要采取任何工程措施。如果内部电池材料泄露，下面的信息将是有用的。

Exposure Control Limit
接触控制限值

Common Chemical Name / General Name 常用化学品名称/通用名称	**OSHA PEL**	**ACGIH TLV**
Manganese compounds (as Mn) 锰化合物 (Mn)	(Celling) 5 mg/m^3 (上限) 5 mg/m^3	TWA 0.02 mg/m^3 (resp.) TWA 0.02 mg/m^3 (呼吸)
Nickel, metal and insoluble compounds 镍，金属和不溶性化合物	(as Ni) TWA 1 mg/m^3 (镍) TWA 1 mg/m^3	Elemental: 1.5mg/m^3 (IHL); 元素:1.5mg/m3 (IHL); Insoluble inorganic compounds: 0.2mg/m^3 (IHL) 不溶无机化合物:0.2mg/m3 (IHL)
Zinc oxide 氧化锌	Respirable fraction: 可吸入粒子比例： 5 mg/m^3	Respirable fraction: 可吸入粒子比例： 2 mg/m^3
Graphite 石墨	Respirable fraction: 可吸入粒子比例： 5 mg/m^3	2 mg/m^3 (all forms except fibers) 2 mg/m^3 (所有形态，纤维除外)
Carbon black 炭黑	3.5 mg/m^3	3.5 mg/m^3 (IHL)
TWA – Time Weighted Average TWA – 时量平均浓度 ACGIH TLV: American Conference of Governmental Industrial Hygienists Threshold Limit Value ACGIH TLV:美国政府工业卫生学家会议阈值限值 OSHA PEL: Occupational Safety & Health Administration Permissible Exposure Limit OSHA PEL:职业安全与健康管理局允许的暴露极限		

Section XII – Ecological Information
第十二节 – 生态资料

N/A

不适用

Section XIII – Disposal Method
第十三节 – 处置方法

Dispose of in accordance with government, state & local regulations.
按照国家和地方政府法规处置电池。

Section XIV – Transportation Information
第十四节 – 运输信息

UN number 联合国货物编号	Not regulated 不限制
Proper shipping name 运输专用名称	Not regulated 不限制
Label(s) / Placard Required 标签 / 标牌要求	N/A 不适用

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.
无论是对内还是对外的的运输或运输方式，用户都需要注意或遵守的特殊预防措施。

ICATO / IATA 国际民间航空组织/国际航空运输协会：	According to International Air Transport Association (IATA) DGR 66th（2025 Edition）, this sample can be classified as "NOT REGULATED, AS PER SPECIAL PROVISION A123". 根据国际航空运输协会 IATA DGR 66th（2025 版）的规定，此样本可以分类为"按照特殊特殊规定A123，不受限制"。
IMDG CODE: 国际海运危险货物规则：	Not regulated 不限制
DOT: 美国运输部：	Not regulated 不限制
ADR / AND: 欧洲国际陆运危险货物协定/关于内陆水道国际运输危险货物的欧洲协定：	Not regulated 不限制

Section XV – Regulatory Information
第十五节–法规信息

Special requirement be according to the local regulatories.
特殊要求按当地有关规定执行。

Section XVI – Other Information
第十六部分 – 其他信息

The data in this Material Safety Data Sheet relates only to the specific material designated herein.
本材料安全数据表中的数据仅涉及此处指定的特定材料。

GP Batteries

Material Safety Data Sheet for GP Cylindrical Alkaline Battery

IDENTITY (As Used on Label and List) Alkaline batteries 13A(LR20)/14A(LR14)/15A(LR6)/ 24A(LR03)/910A(LR1)/25A(LR8D425)	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 1- Identification

Manufacturer's Name GPI International Ltd. Zhongyin (Ningbo) Battery Co., Ltd. NingboGP & Sonluk Battery Co.,Ltd.	Telephone Number for information 852-2484-3111
Address (Number, Street, City State, and ZIP Code) 7/F, Building 16W, 16 Science Park West Avenue, Hong Kong Science Park, New Territories. H.K.	Date of prepared and revision 01 Jan, 2025
	Signature of Prepare (optional)

Section 2 – Hazards Identification

This contains potassium hydroxide solution (KOH), and other combustible materials, all sealed in steel can. For this reason, improper handling of the battery could lead to distortion, leakage*, overheating, explosion and cause human injury or equipment trouble. Please strictly observe safety instructions. (*leakage is defined as an unintended escape of liquid from a battery.)

Section 3 – Composition/Information on Ingredients

Ingredient	CAS#	EINECS No.	Approximate Content (wt%)					
			15A (LR6)	24A (LR03)	14A (LR14)	13A (LR20)	910A (LR1)	25A (LR8D425)
Manganese Dioxide (MnO_2)	1313-13-9	215-202-6	42.6	42.0	41.0	41.8	34.2	36.0
Zinc (Zn)	7440-66-6	231-175-3	18.1	16.9	17.8	17.4	13.5	17.0
Water (H_2O)	7732-18-5	231-791-2	8.3	7.2	11.5	10.9	9.5	6.5
Potassium Hydroxide (KOH)	1310-58-3	215-181-3	6.3	4.8	8.0	7.0	4.2	1.3
Graphite	7782-42-5	231-955-3	3.0	2.5	2.8	3.4	3.0	2.3
Brass	12597-71-6	603-111-8	2.4	3.5	0.8	0.8	2.3	3.5
Steel	7439-89-6	231-096-4	17.5	21.2	15.7	16.3	29.5	30.0
Ni-plating	7440-02-0	231-111-4	0.3	0.3	0.2	0.2	0.3	0.6
Nylon	32131-17-2	608-706-6	0.9	0.9	1.4	1.4	2.9	2.2
Cellulose microcrystalline	9004-34-6	232-674-9	0.6	0.7	0.8	0.8	0.6	0.6

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

GP Batteries

Material Safety Data Sheet for GP Cylindrical Alkaline Battery

Section 4 – First Aid Measures

None unless internal materials exposure. If contents are leaked out, observe following instructions:

Inhalation	Fumes can cause respiratory irritation. Remove to fresh air and consult a physician.
Skin	Immediately flush skin with plenty of water. If itch or irritation by chemical burn persists, consult a physician.
Eyes	Immediately flush eye with plenty of water for at least 15 minutes. Consult a physician immediately
Ingestion	If swallowing a battery, consult a physician immediately. If contents come into mouth, immediately rinse by plenty of water and consult a physician.

Section 5 – Fire-Fighting Measures

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 6 – Accidental Release Measures

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 7 – Handling and Storage

1) Handling

Never swallow. Never charge. Never heat. Never expose to open flame. Never disassemble.

Never reverse the positive and negative terminals when mounting.

Never short-circuit the battery. Never weld the terminal or wire to the body of the battery directly.

Never use different batteries together. Never touch the liquid leaked out of battery.

Never bring fire close to battery liquid. Never keep in touch with battery.

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

2) Storage

Never store the battery in hot and high humid place.

Section 8– 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	Eye Protection
N.A.	N.A.

Other Protective Clothing or Equipment

N.A.

Work / Hygienic Practices

N.A.

Section 9 - Physical / Chemical Properties

Boiling Point	Specific Gravity (H_2O=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.

Appearance and Odor

Cylindrical Shape, odorless

Section 10 – Stability and Reactivity

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 11 – Toxicological Information

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 12 – Ecological Information

N.A.

Section 13 – Disposal Considerations

Dispose of batteries according to government regulations. Please follow the instructions of proper regulation. As electric capacity is left in a discarded battery and it comes into contact with other metals, it could lead to distortion, leakage, overheating, or explosion, so make sure to cover the (+) and (-) terminals with friction tape or some other insulator before disposal.

Section 14 – 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, 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 of dangerous quantities of heat and meet the special provisions listed above. In addition, the 2025 IATA (66th edition) 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 15 – Regulatory Information

Special requirements according to local regulations.

Section 16 – Other Information

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

Section 17 – 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.

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