



# MSDS Report

|                                   |  |
|-----------------------------------|--|
| <b>Prepared For:</b><br>申请商:      | New Leader Battery Industry (Deqing) Co., Ltd.<br>新利达电池实业（德庆）有限公司<br>Chaoyang West Road No. 108, Deqing County, Zhaoqing City<br>肇庆市德庆县城朝阳西路 108 号   |
| <b>Product Name:</b><br>产品名称:     | 0% HG MERCURY FREE ALKALINE ZINC MANGANESE<br>BUTTON CELL<br>无汞碱性锌锰钮型电池  |
| <b>Model 型号:</b>                  | LR44   |
| <b>Nominal Voltage:</b><br>标称电压:  | 1.5V   |
| <b>Typical Capacity:</b><br>典型容量: | 158mAh   |
| <b>Prepared By :</b><br>编制单位:     | NRCC (Shenzhen) Safety Technology Co., Ltd.<br>诺诚（深圳）安全科技有限公司<br>(Testing and Inspection Body affiliated to the National<br>Registration Center for Chemicals, MEM)<br>(应急管理部化学品登记中心旗下检测检验机构)<br>Building A, No.2, Tengfeng 5th Road, Fuyong, Bao'an District,<br>Shenzhen<br>深圳市宝安区福永街道腾丰五路 2 号 A 栋 |
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Written by 编写:



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# Material Safety Data Sheet

## 化学品安全技术说明书

### Section 1- Chemical Product & Company Identification

#### 第一部分 化学品及企业标识

|  |   |
|--|---|
| <b>Name of sample</b><br>样品名称          | 0% HG MERCURY FREE ALKALINE ZINC MANGANESE BUTTON CELL<br>无汞碱性锌锰钮型电池          |
| <b>Manufacturer's name</b><br>制造商名称    | New Leader Battery Industry (Deqing) Co. , Ltd.<br>新利达电池实业（德庆）有限公司            |
| <b>Manufacturer's address</b><br>制造商地址 | Chaoyang West Road No. 108, Deqing County, Zhaoqing City<br>肇庆市德庆县城朝阳西路 108 号 |
| <b>Factory's name</b><br>工厂名称          | New Leader Battery Industry (Deqing) Co. , Ltd.<br>新利达电池实业（德庆）有限公司            |
| <b>Factory's address</b><br>工厂地址       | Chaoyang West Road No. 108, Deqing County, Zhaoqing City<br>肇庆市德庆县城朝阳西路 108 号 |
| <b>Contact Person 联系人</b>              | Jiang Dongtao   |
| <b>Emergency Tel 应急电话</b>              | +86-758-7766802   |
| <b>E-mail 邮箱</b>                       | hf@newleader.cn   |

### Section 2- Hazards Identification

#### 第二部分 危险性概述

|   |   |
|---|---|
| <b>Hazard Description</b><br>危险性描述          | Not dangerous with normal use. Do not dismantle, open or shred the battery ingredients contained within or their ingredients products could be harmful.<br>正常使用没有危险，不能拆解、打开或分解电池，里面的材料或成分是有危害的。 |
| <b>Primary Route(s) of Exposure</b><br>接触途径 | Inhalation, Ingestion, Skin contact and Eye contact.<br>吸入、食入、皮肤接触、眼睛接触。  |

**Potential Health Effects**  
潜在健康影响

**Inhalation:** Vapors or mists from a ruptured battery may cause respiratory irritation.

**吸入:** 破裂的电池散发出来的气雾会引起呼吸道刺激。

**Ingestion:** The battery ingredients contained within or their ingredients products can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

**食入:** 电池的组成成分或原料可以导致嘴, 食道和胃肠道的严重化学烧伤。

**Skin:** Skin contact with contents of an open battery can cause severe irritation or burns to the skin.

**皮肤:** 皮肤接触到电池的内部化学材料可能会导致严重的刺激或烧伤皮肤。

**Eye:** Eye contact with contents of an open battery can cause severe irritation or burns to the eye.

**眼睛:** 眼睛接触到电池的内部化学材料可能会导致严重的刺激或烧伤眼睛。

## Section 3- Composition/Information on Ingredients

### 第三部分 成分/组成信息

| Chemical Name<br>化学名称    | Concentration or<br>concentration ranges (%)<br>浓度或浓度范围(%) | CAS Number<br>CAS 号 (化学文摘索引登记号) |
|--------------------------|--|---------------------------------|
| Zinc 锌                   | 8  | 7440-66-6                       |
| Graphite 石墨              | 3  | 7782-42-5                       |
| Manganese dioxide 二氧化锰   | 24   | 1313-13-9                       |
| Potassium hydroxide 氢氧化钾 | 3  | 1310-58-3                       |
| Iron 铁                   | 52   | 65997-19-5                      |
| Distilled Water 纯水       | 5  | 7732-18-5                       |
| Nylon 尼龙                 | 5  | 63428-83-1                      |

Note: CAS number is Chemical Abstract Service Registry Number.

注意: CAS 号是化学文摘服务注册号。

N/A=Not apply.

N/A =不适用。

## Section 4- First Aid Measures

### 第四部分 急救措施

|                             |  |
|-----------------------------|--|
| <b>Inhalation</b><br>吸入     | Remove source of contamination or move victim to fresh air. Obtain medical advice.<br>移除污染源或者将受害者移至新鲜空气处。寻求医生建议。   |
| <b>Ingestion</b><br>食入      | Please rinse mouth thoroughly with water. Induce vomiting under the guidance of professional personage. Please seek medical treatment in time.<br>立即用清水漱口，在专业人士的指导下催吐，速就医。 |
| <b>Skin contact</b><br>皮肤接触 | Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.<br>脱下已污染衣服，用大量的水冲洗至少 15 分钟，速就医。                                 |
| <b>Eye contact</b><br>眼睛接触  | Irrigate with flowing water for 15 minutes. If irritation persists, consult a physician.<br>用流动水冲洗 15 分钟，如刺激持续发生，请求助于医生。   |

## Section 5- Fire Fighting Measures

### 第五部分 消防措施

|   |   |
|---|---|
| <b>Characteristics of Hazard</b><br>危险特性                              | Toxic fumes, gases or vapors may evolve on burning.<br>火灾时可释放有害浓烟、气体或者蒸汽。                               |
| <b>Hazardous Combustion Products</b><br>燃烧产生的危险物品                     | Carbon monoxide, carbon dioxide and so on.<br>一氧化碳，二氧化碳等。   |
| <b>Fire-extinguishing Methods and Extinguishing Media</b><br>灭火方法及灭火剂 | Please use dry powder fire extinguisher and other proper fire extinguishing media.<br>请使用干粉灭火器等合适的灭火介质。 |
| <b>Attention in Fire-extinguishing</b><br>灭火注意事项                      | The firemen should put on antigas masks and full fire-fighting suits.<br>消防人员须佩戴防毒面具、穿全身消防服。            |

## Section 6- Accidental Release Measures

### 第六部分 泄露应急处理



|   |  |
|---|--|
| <b>Personal Precautions, protective equipment, and emergency procedures</b><br>个人预防措施、防护装备和应急程序 | Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate personal protective equipment as indicated in Section 8.<br>限制区域，直到完成清理工作。请勿触摸泄漏的材料。穿戴适当的个人防护设备，如第 8 部分所示。  |
| <b>Environmental Precautions</b><br>环境保护措施  | Prevent material from contaminating soil and from entering sewers or waterways.<br>防止物质污染土壤和进入下水道或水道。  |
| <b>Methods and materials for Containment</b><br>方法和材料控制   | Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.<br>出于安全，阻止泄漏，可以用干砂或沙土来遏制液体泄露，立即清理泄漏。   |
| <b>Methods and materials for cleaning up</b><br>清理的方法和材料  | Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal.<br>用惰性吸收剂(干砂或沙土)吸收溢出的材料。污染物转移到可吸收废物的容器。收集所有受污染的吸收剂和根据第 13 部分的指令处置。用洗涤剂和水清洁污染区域,收集所有受污染的洗涤水进行适当处置。 |

## Section 7- Handling and Storage

### 第七部分 操作处置与储存

|                       |  |
|-----------------------|--|
| <b>Handling</b><br>操作 | Don't handling the batteries in manner that allows terminals to short circuit. Do not open, disassemble, crush or burn battery.<br>不要以让接头短路的方式对电池进行操作。不要打开，分解，挤压或燃烧电池。 |
|-----------------------|--|

|                             |   |
|-----------------------------|---|
| <b>Storage</b><br><b>储存</b> | <p>Do not storage the battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.</p> <p>不要将电池随意丢在盒子或抽屉里，以免电池之间或电池与其他金属物质发生短路。</p> <p>Keep out of reach of children.</p> <p>储存在小孩接触不到的地方。</p> <p>Do not expose the battery to heat or fire. Avoid storage in direct sunlight.</p> <p>不要将电池暴露在火源和热源附近，避免在阳光直射下存储。</p> <p>Do not store together with oxidizing and acidic materials.</p> <p>不要与氧化和酸性物质存储在一起。</p> |
|-----------------------------|---|

## Section 8 - Exposure Controls/Personal Protection

### 第八部分 接触控制和个体防护

|   |  |
|---|--|
| <b>Engineering Controls</b><br><b>工程控制</b>            | <p>No engineering controls are required for handling batteries that have not been damaged.</p> <p>Personal protective equipments for damaged batteries should include chemical resistant gloves and safety glasses.</p> <p>操作未破损的电池，没有工程控制要求。对于破损的电池，个人防护用品应包括化学品防护手套和安全眼镜。</p>  |
| <b>Personal Protective Equipment</b><br><b>个人防护设备</b> | <p>Respiratory Protection: In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use. Not necessary under conditions of normal use.</p> <p>呼吸保护：当电池排气阀打开时，应尽量使通风设备开至最大，避免将打开排气阀的电芯局限在某一狭窄空间内。正常操作条件下，呼吸保护是不必要的。正常使用条件下不必考虑。</p> <p>Protective Gloves: Not necessary under conditions of normal use.</p> <p>防护手套：正常使用条件下不必考虑。</p> <p>Other Protective Clothing or Equipment: Not necessary under conditions of normal use.</p> <p>其他防护服装或设备：正常使用条件下不必考虑。</p> <p>Personal Protection is recommended for venting battery: Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.</p> <p>当电池排气阀打开时，应做好个人防护：呼吸防护，防护手套，防护服装和有护边的安全玻璃罩都是要准备的。</p> |

## Section 9- Physical and Chemical Properties

### 第九部分 理化特性

|  |                                |
|--|--------------------------------|
| <b>Physical State</b><br>物理状态          | Form: Solid<br>形态: 固体          |
|  | Color: Silver<br>颜色: 银色        |
|  | Odour: Odorless<br>气味: 无气味     |
| <b>Change in condition</b><br>变化的条件    |                                |
| <b>pH</b><br>酸碱度                       | No data is available<br>无数据可提供 |
| <b>Flash Point</b><br>闪点               | No data is available<br>无数据可提供 |
| <b>Flammability</b><br>易燃度             | No data is available<br>无数据可提供 |
| <b>Relative density</b><br>相对密度        | No data is available<br>无数据可提供 |
| <b>Solubility (Water)</b><br>溶解性 (水溶性) | No data is available<br>无数据可提供 |
| <b>Solubility (Other)</b><br>溶解性 (其他)  | No data is available<br>无数据可提供 |

## Section 10 – Stability and Reactivity

### 第十部分 稳定性和反应性

|                                      |   |
|--------------------------------------|---|
| <b>Stability</b><br>稳定性              | Stable under normal temperatures and pressures.<br>常温常压下稳定。   |
| <b>Conditions to Avoid</b><br>应避免的条件 | Heat above 70°C or Incinerate, Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions.<br>加热 70°C 以上或焚烧、变形、毁坏、粉碎、拆卸、过充电、短路, 长时间暴露在潮湿的条件下。 |

|  |   |
|--|---|
| <b>Hazardous Decomposition Products</b><br>危害分解物     | Toxic Fumes, and may form peroxides.<br>有毒烟雾，并可能形成过氧化物。   |
| <b>Possibility of Hazardous Reaction</b><br>危险反应的可能性 | If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.<br>如果发生泄露，避免与强氧化剂，无机酸，强碱，卤代烃接触。 |

## Section 11 – Toxicological Information

### 第十一部分 毒理学信息

|   |  |
|---|--|
| <b>Irritation</b><br>刺激                                 | In the event of exposure to internal contents, vapor fumes may be very irritating to the eyes and skin.<br>内部物质暴露的情况下，蒸汽烟雾可能对眼睛和皮肤产生刺激性。 |
| <b>Sensitization</b><br>致敏                              | No data is available<br>无数据可提供   |
| <b>Reproductive Toxicity</b><br>再生毒性                    | No data is available<br>无数据可提供   |
| <b>Toxicologically Synergistic Materials</b><br>协同材料毒理学 | No data is available<br>无数据可提供   |

## Section 12-Ecological Information

### 第十二部分 生态学信息

|   |  |
|---|--|
| <b>General note</b><br>通用信息   | Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.<br>不允许未稀释或大量的产品到达地下水、水道或污水系统。 |
| <b>Anticipated behavior of a chemical product in environment/possible environmental impact/ecotoxicity</b><br>化学产品在环境/可能的环境预期的行为的一种生态毒性 | No data is available<br>无数据可提供   |



|   |                                |
|---|--------------------------------|
| <b>Mobility in soil</b><br>土壤中移动性               | No data is available<br>无数据可提供 |
| <b>Persistence and Degradability</b><br>持久性和降解性 | No data is available<br>无数据可提供 |

## Section 13 – Disposal Considerations

### 第十三部分 废弃处置

|  |  |
|--|--|
| <b>Waste Treatment</b><br>废弃处置方法               | Recycle or dispose of in accordance with government, state & local regulations.<br>建议遵照国家和地方法规处置或再利用。  |
| <b>Attention for Waste Treatment</b><br>废弃注意事项 | Deserted batteries couldn't be treated as ordinary trash. Couldn't be thrown into fire or placed in high temperature. Couldn't be dissected, pierced, crushed or treated similarly. Best way is recycling.<br>废电池不能被当做普通垃圾。不能扔进火中或置于高温下。不能解体，刺穿，破碎或类似的处理。最好的办法是回收利用。 |

## Section 14 – Transport Information

### 第十四部分 运输信息

According to Special Provision A123 of the 2025 *IATA Dangerous Goods Regulations 66<sup>th</sup> Edition*, Examples of such batteries are:

Alkali -manganese, zinc-carbon and nickel-cadmium batteries. Any electrical battery or battery powered device, equipment or vehicle having the potential of a dangerous evolution of heat must be prepared for transport so as to prevent:

根据 2025 年 IATA 《危险物品规则》第 66 版特别规定 A123，这类电池比如：

碱性电池、碳性电池和镍镉电池。任何此类电池或电池供电的装置、设备或车辆在运输中都必须采取措施来防止以下潜在的危险：

(a) 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); and

(a) 短路（例如：如果是电池的话，需要将暴露的端子做有效的绝缘；如果是设备的话，需要断开电池和端子的连接）和

(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 “Not Dangerous Goods”, when an Air Waybill is issued.

(b)意外启动

根据非危险物质托运单的要求，需要在托运单上标注清楚“不受限制”一词和特殊规定条款号。

UN number of Batteries, dry: N/A

干电池的 UN 编号：不适用

UN Proper shipping name/Description(technical name): Batteries, dry

联合国正确运输名称/描述(技术名称)：干电池

UN Classification(Transport hazard class): N/A

UN 危险品分类（运输危险类别）：不适用

Packing group: N/A

包装等级：不适用

The battery is not restricted according to IMO IMDG Code (inc Amdt 42-24).

根据 IMO IMDG Code (inc Amdt 42-24) 可按普通货物条件办理。

The battery is not restricted according to JT/T 617.2-2018 “Regulations concerning road transportation of dangerous goods - Part 2:Classification”.

根据 JT/T 617.2-2018《危险货物道路运输规则 第2部分：分类》可按普通货物条件办理。

The battery is not restricted according to ADR 2025.

根据 ADR 2025 可按普通货物条件办理。

The battery is not restricted according to “List of dangerous goods in railway (TB/T 30006-2022)”.

根据《铁路危险货物品名表》（TB/T 30006-2022）可按普通货物条件办理。

The battery is not restricted according to RID 2025.

根据 RID 2025 可按普通货物条件办理。

## Section 15 – Regulatory Information

### 第十五部分 法规信息

With regard to transport, the following regulations are cited and considered:

关于运输, 引用以下规章和考量:

- *The International Civil Aviation Organization (ICAO) Technical Instructions*  
-国际民用航空组织(ICAO)技术说明
- *The International Air transport Association (IATA) Dangerous Goods Regulations*  
-国际航空运输协会(IATA)危险货物规则
- *The International Maritime Dangerous Goods (IMDG) Code*  
-国际海上危险货物运输(IMDG)代码
- *The Office of Hazardous Materials Safety within the US Department of Transportation (DOT)*  
-美国能源部运输办公室
- *Research and Special Programs Administration (RSPA)*  
-危险品安全研究和特殊的计划管理局(RSPA)
- *Regulations concerning road transportation of dangerous goods*  
-危险货物道路运输规则
- *List of dangerous goods in railway*  
-铁路危险货物品名表
- *Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR)*  
-危险货物国际道路运输欧洲公约
- *Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)*  
-国际铁路危险货物运输规则

## Section 16 – Additional Information

### 第十六部分 其他信息

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your



information, consideration and investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.

在我们看来上面的信息是准确的，这是我们目前能提供的最佳的信息。但是，对于这些信息，我们不对商品的性能做任何明示的或者暗示的保证，我们也不对使用这些信息造成的后果担负任何责任。用户应当自己调查研究后决定这些信息是否适用于他们的特定用途。尽管在该文档里提出了合理的预警，但是这仅仅只是给您做参考，考量和调查。这份安全技术说明书提供了安全处理和使用该产品的指南，但是它没有，也不能对所有可能发生的情景提出建议，所以您需要根据您对该产品的特定使用情况来决定是否需要其他的预防措施。

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\*\*\*\*\*End of MSDS Report\*\*\*\*\*