



新利達電池有限公司 NEW LEADER BATTERY LIMITED.

Safety Data Sheet for (0.%Hg) Alkaline Button Cell (LR) Series

Document Number: SDS-LR BC(0.%Hg) **Not for recharge** 不可充電 (Version : 2015)

SECTION 1 – Manufacturer Information 生產商資料

Manufacturer's Name 生產商: New Leader Battery Limited 新利達電池有限公司

Emergency & Information Phone No 緊急聯絡電話: 852 - 2790 6280

Address: Rm A, 4/F, Block 1, Camelpaint Building, 62 Hoi Yuen Road, Kwun Tong, Kowloon, Hong Kong.

Signature of Prepare (Optional)

SECTION 2 – Information Ingredients 成份表

IMPORTANT NOTE :

Use under normal conditions, the Zinc Manganese Alkaline Button Cell is hermetically sealed.

銘錳軟性扣式電池在正常使用下是密封的。

Ingestion: Swallowing a battery can be harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. **IMMEDIATELY SEE DOCTOR;** Do not induce vomiting or give food or drink.

誤服: 吞服任何含有毒物的誤服了的電池會導致化學性燒傷,使食道嚴重灼傷,若一誤服應立即盡快找附近的醫生診斷,不要給誤服者飲食或飲水,誤服之電池吐出。

Inhalation: Contents of an open battery can cause respiratory irritation.

吸入: 吸入了開放的電池會刺激呼吸道。

Skin Contact: Contents of an open battery can cause skin irritation.

皮膚接觸: 接觸了開放的電池會導致皮膚過敏。

Eye Contact: Contents of an open battery can cause severe irritation.

眼睛接觸: 如果不小心接觸了已開放的電池會導致劇烈刺激。

Substance Name 名稱	Chemical Identification CAS# 代號	% Weight
Zinc 鋅	7440 - 66 - 6	8%
Graphite 石墨	7782 - 42 - 5	3%
Manganese Dioxide 二氧化錳	1313 - 13 - 9	30%
Potassium Hydroxide 氫氧化鉀	1310 - 58 - 3	10%
Iron 鐵	7439 - 89 - 6	37%
Distilled Water 純水	7732 - 18 - 5	12%

January .2015



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SECTION 3 – Hazards Identification 危害健康之數據

Route(s) of Entry 進入人體之途徑

Inhalation 吸入 : N.A.

Skin 皮膚 : N.A.

Ingestion 攝取 : N.A.

Health Hazard (Acute and Chronic) / Toxicological information 危害健康/毒性信息

In case of electrolyte leakage , skin will be itchy when contaminated with electrolyte

如電解液洩漏了，接觸到皮膚會導致皮膚發癢

In contact with electrolyte can cause severe irritation and chemical burns 接觸到電解液會引起化學灼傷

Inhalation of electrolyte vapors may cause irritation of the upper respiratory tract and lungs

吸入了蒸發化的電解液，會引起上呼吸道和肺部敏感

SECTION 4 – First Aid Measures 急救處理措施

Ingestion: Do not induce vomiting or give food or drink. Seek medical attention immediately. Call National Battery Ingestion Hotline for advice.

誤服：不要給誤服者飲食或企圖把誤服之電池吐出，應立即盡快找最近的醫生診斷，聯絡國際電池熱線尋求意見

Inhalation : Provide fresh air and seek medical attention.

吸入：提供新鮮的空氣和盡快找最近的醫生診斷

Skin Contact : Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention

皮膚接觸：把受污染的衣服移走，應立即用肥皂水清洗皮膚

Eye Contact : Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

眼睛接觸：盡快用淨水沖洗 15 分鐘，移動上下眼皮，直至沒有化學物殘留在眼內，需盡快找最近的醫生診斷

SECTION 5 – Control Fire Measures

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.

如船上等場所引發之火警，可用任何類型的滅火器救火和電池的包裝材料，請勿打破裂的電池放入火堆中，該火時應裝上有自動提供氧氣的滅火衣



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SECTION 6 – Accidental Release or Spillage 處理意外釋放或溢出之電池

Ventilation Requirements: Room ventilation may be required in areas where there are open or leaking batteries
通風設備：如發生漏液或液批,應把電池移往室內通風地方

Eye Protection: Wear safety glasses with side shields if handling an open or leaking battery
眼保護：處理、注開或漏液之電池,放入已滿載了水的水杯內

Gloves: Use neoprene or natural rubber gloves if handling an open or leaking battery.
Battery materials should be collected in a leak-proof container
手套：已打開或漏液之電池在處理時,應帶上橡膠手套和放入防漏之容器內

SECTION 7 – Handling and Storage

Storage : Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life.
存放：電池應存放在通風及清涼的地方,高溫度存放會縮短電池壽命

Handling: Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy, and can cause the safety release vent to open. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices.

處理：電池短路幾秒鐘不會有嚴重之影響,短路時間會對電池容量造成影響,產生高熱影響安全。其他兩節或全副物品混裝在單一容器內,會對電池產生短路,被破壞之電池結構內會形成短路

Charging: This battery is manufactured in a charged state. Its is not designed for recharging. Recharging can cause battery leakage or in some case, high pressure rupture. Inadvertent charging can occur if a battery is installed backwards

充電：電池在生產時已有足夠容量,此款電池設計是不適用在充電電池上,如電池再充電有機會令電池漏液及因高壓造成破壞,如不慎把電池充電可令電池發生火災

SECTION 8 – Exposure Controls / Person Protection 接觸控制/個人保護

Ventilation Requirements 通風系統之要求 : N.A.

Respiratory Protection 呼吸器保護: N.A..

Eyes Protection 眼保護 : N.A.

Gloves 手套 : N.A.

SECTION 9 – Physical / Chemical Characteristics 物理/化學特性

Boiling Point 沸點 : N.A.

Specific Gravity 比重 (H2O = 1) : N.A.

Melting Point 融點 : N.A.

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Vapor Pressure 蒸氣壓 (mm Hg) : N.A.
Vapor Density 蒸氣密度 (AIR = 1) : N.A.
Evaporation Rate (Butyl Acetate) : N.A.
Solubility in Water 溶解度 : N.A.
Appearance and Odor 外觀和氣味 , Cylindrical Shape, Odorless 圓柱形 : 無氣味

SECTION 10 – Reactivity Data 反應性數據
Stability 穩定性 stable 穩定
Conditions to Avoid 避免條件 : Stable 穩定
Hazardous Decomposition or Byproducts : 副產品或分解物是危險的
The Alkaline Manganese Button Cell do not meet any of the criteria established in 40 CFR 261.2 of reactivity 鹼性錳乾性扣式電池的反應性達不到40CFR 261.2 的標準

SECTION 11– Toxicological Information 毒物學的資料 : N.A.

SECTION 12– Ecological Information 生態學的資料 : N.A.

SECTION 13– Disposal Method : Dispose of the batteries according to government regulations.

SECTION 14 – Transport Information 運輸資訊

The Batteries in all forms of transportation (e.g. Truck, air, or sea) 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 Carton / Packaging) that prevents spillage of contents.
所有電池之運送方式(e.g. 航空, 陸運, 海運)必須要有負責任之態度和安全的包裝來運送。所有代理在監管安全包裝的問題上, 必須裝在(加厚紙箱/包裝)防止短路和防止電池漏出之包裝容器內。

Alkaline Button Cell (sometime referred to as "**Dry Cell**") 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 Regulation, 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 requirement contained in the following special provisions.
鹼性扣式電池(有時被稱作"**干電池**")在 **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 Regulation, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR) 的危險品分類中。
此電池有下列的運送條件, 也不屬於危險品:



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Regulatory Parties	Special Provisions
ADR	Not Regulated
IMDG	Not Regulated
UN, ICAO	Not Regulated
US DOT	49 CFR 172.102 Provision 130
IATA,	A123,

Ref: Summary of Packing Instruction (IATA Dangerous Goods Regulations 56th Edition) the minimum requirements necessary to transport as non-restricted goods are as follows

標托在包裝中時 (IATA 危險品條例 56 版), 在非進禁品運輸中最基本之要求如下:

****All 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 ICAO Technical Instructions require the words " Not Restricted" and the Special Provision No: A123 be provided on the air waybill, when an air waybill is issued.**

所有鹼性電池必需包裝在防止短路或在防止產生過熱之數目內和達到自因特別註明之要求下。另外有關國際危險品的規則中的 ICAO 技術指示 "Not Restricted" 字樣, 在 A123 的特別條例中必須表現在空運提單中。

SECTION 15– Regulatory Information: Alkaline Button Cell are not classified as dangerous goods by US Department of Transportation or the major international regulatory bodies and are therefore not regulated.

SARA/TITLE III – As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right to Know Act.

在美國運輸, 因包裝同類之條例中, 鹼性電池及電池只不列在危險品之種類內。

SARA/TITLE III – 文章中, 此種電池沒有在有關急亦定之項目中。

SECTION 16 – Other Information : None

ALKALINE ZINC-MANGANESE DIOXIDE

MERCURY-FREE BUTTON CELL

(SAFETY STRUCTURE)

碱性锌-二氧化锰无汞扣式电池
(安全结构)

LR44

TECHNICAL SPECIFICATION

技术规格书

Doc. No. 编号: NL-TS-G13MFSS

Rev. 版次: A0

Date 日期: 2015-1-1

NEW LEADER BATTERY LTD.

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The manufacturer reserves the right to modify product specification herein without prior notice.

本公司对本产品技术规格如有更改, 恕不另行通知。

1 Scope 适用范围

This specification is applicable to New Leader's alkaline zinc-manganese dioxide mercury-free button cell : LR44 (safety structure)

本规格书适用于新利达碱性锌-二氧化锰无汞扣式电池：LR44 (安全结构)

2 Designations 型号

NEW LEADER 新利达	IEC	ANSI	JIS	OTHERS 其他
LR44	LR44	1166A	A13	AG13, A76, L1154

3 Normative references 规范性引用文件

GB/T 8897.1—2013 原电池 第1部分：总则 (IEC 60086-1: 2011, MOD)

GB/T 8897.2—2013 原电池 第2部分：外形尺寸和电性能要求 (IEC 60086-2: 2011, MOD)

GB/T 8897.3—2013 原电池 第3部分：手表电池 (IEC 60086-3: 2011, MOD)

GB 8897.5—2013 原电池 第5部分：水溶液电解液电池的安全要求 (IEC 60086-5: 2011, IDT)

4 Chemical System 化学体系

Zinc-Manganese Dioxide (Potassium Hydroxide Electrolyte)

锌-二氧化锰 (氢氧化钾电解液)

5 Nominal Voltage 标称电压

1.5 V

6 Average Weight 平均重量

1.92 g

7 Typical Capacity 典型容量

155 mAh

Condition: Rated at 6.8K Ω at (20 \pm 2) $^{\circ}$ C, continuous discharge to end-point voltage 0.9V.

条件：在(21 \pm 2) $^{\circ}$ C环境下，使用 6.8K Ω 电阻连续放电至终止电压 0.9V。

8 Electrical Characteristics 电性能

Item 项目	Resistance 电阻	Fresh Battery (Within 30 days after delivery) 新电池 (交货后 30 天内)	After 12 months 贮存 12 个月后	Test Conditions 检测条件
Off-load Voltage 空载电压	—	1.53V ~ 1.65V	1.52V ~ 1.62V	Temp. 温度: (20 \pm 2) $^{\circ}$ C RH 相对湿度: (55 \pm 20)%
On-load Voltage 负载电压	6.8 K Ω	1.52V ~ 1.65V	1.51V ~ 1.62V	Temp. 温度: (20 \pm 2) $^{\circ}$ C RH 相对湿度: (55 \pm 20)%

9 Discharge Performance 放电性能

Discharge Conditions 放电条件				Minimum Average Duration 最小平均放电时间 (MAD)	
Resistance 电阻	Discharge Schedule 放电计划	End-point Voltage 终止电压	Environmental Conditions 环境条件	Fresh Battery 新电池	After 12 Months 贮存 12 个月后
6.8 K Ω	Continuous 连续	0.9 V	Temp. 温度: (20 \pm 2) $^{\circ}$ C RH 相对湿度: (55 \pm 20)%	750 h 小时	680 h 小时


10 Safety Characteristics 安全性能

Test Item 测试项目	Condition 条件	Period 时间	Requirements 要求	Acceptance Standard 验收标准
External Short Circuit 外部短路	Temp. 温度: (20 \pm 5) $^{\circ}$ C	24 h 小时	There shall be no explosion of battery 电池没有爆炸	N=9 Ac=0 Re=1

11 Marking 标志

The following marking will be printed, stamped or impressed on the body of the battery:

在电池上标明以下内容:

- (1) Designation 型号: LR44
- (2) Polarity marking 极性标记: " + " Marked on cathode can 正极外壳标记 "+"。
- (3) Manufacturer's trade mark 制造商商标: 
- (4) Mercury-free marking 无汞标识: 0.0% Hg CELL

12 Cautions 注意事项

12.1 Storage 贮存

Batteries shall be stored in well-ventilated, dry and cool conditions. For normal storage, the temperature should be between 10 $^{\circ}$ C and 25 $^{\circ}$ C and should never exceed 30 $^{\circ}$ C, the relative humidity should be at (55 \pm 20)%. High temperature or high humidity may cause deterioration of the battery performance or surface corrosion.

电池应贮存在通风良好、阴凉干燥处。正常的贮存温度应在 10 $^{\circ}$ C ~ 25 $^{\circ}$ C，不应当超过 30 $^{\circ}$ C，相对湿度应在(55 \pm 20)%。高温或高湿可能会损害电池性能或造成电池表面腐蚀。

12.2 Use and Disposal 使用和处置

- (1) Always insert batteries correctly with regard to the polarities (+ and -) marked on the battery and the equipment. Batteries which are incorrectly placed into equipment may be short-circuited, or charged. This can result in a rapid temperature rise causing leakage, explosion and may cause personal injury.

应按电池和电器具上标明的极性标志 (+ 和 -) 正确地装入电池。不正确装入电器具的电池有可能被短路或充电，使电池温度迅速升高，导致漏液，爆炸和人身伤害。

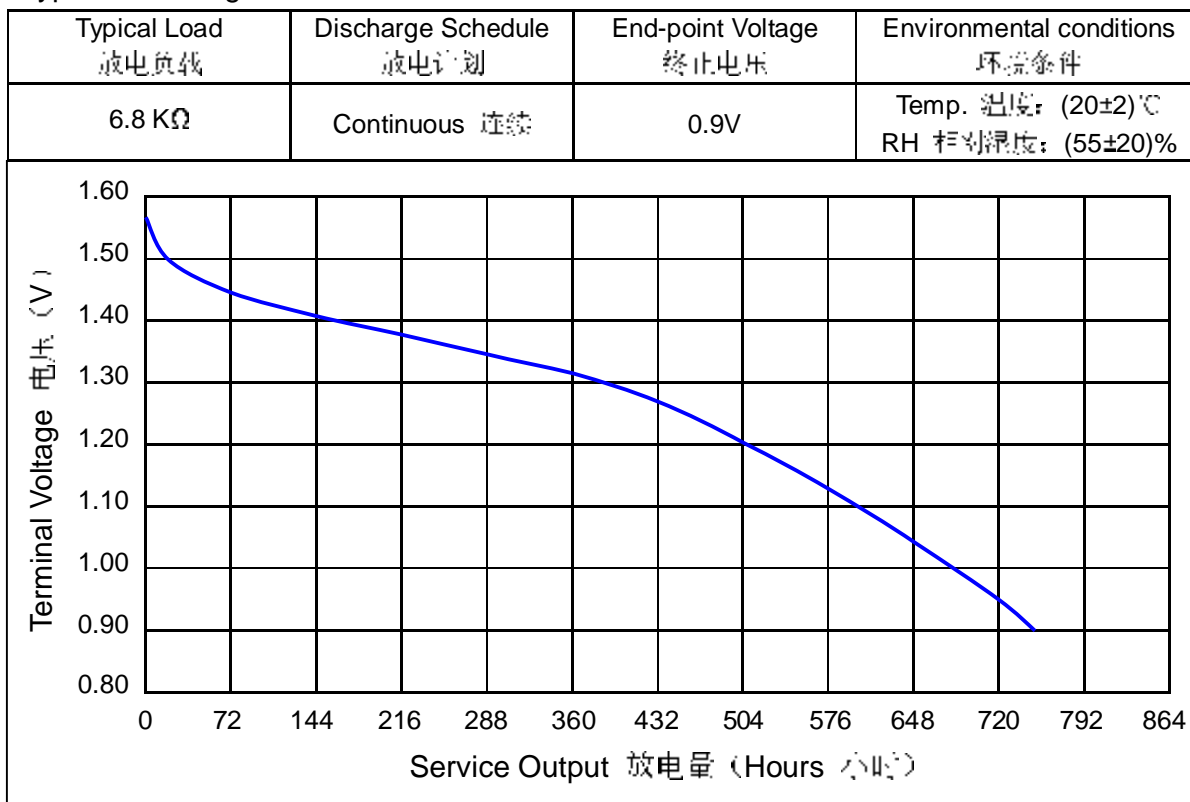
- (2) Batteries should not be short-circuited, heated and thrown into fire.
不要将电池短路、加热及投入火中。
- (3) Do not charge batteries. Attempting to charge a non-rechargeable battery may cause internal gas and/or heat generation resulting in leakage, explosion and may cause personal injury.
不要对电池进行充电。试图对不可充电的电池充电会使电池内部产生气体和/或热量，导致电池漏液、爆炸和人身伤害。
- (4) Do not mix old and new batteries or batteries of different types or brands. When replacing batteries, replace all of them at the same time with new batteries of the same brand and type. When batteries of different brand or type are used together, or new and old batteries are used together, some batteries may be over-discharged due to a difference of voltage or capacity. This can result in leakage, explosion and may cause personal injury.
不要将新旧、不同型号或品牌的电池混用。更换电池时，要用同一品牌、同一型号的新电池同时更换全部电池。不同品牌或不同型号的电池或新旧电池混用时，由于存在电压或容量的差异，可能会使某些电池过放电，从而导致电池漏液，爆炸和人身伤害。
- (5) Exhausted batteries should be immediately removed from equipment and properly disposed of. When discharged batteries are kept in the equipment for a long time, electrolyte leakage may occur causing damage to the appliance and/or personal injury.
应立即从电器中取出已耗尽电能的电池并妥善处理。放过电的电池长时间留在电器中有可能发生电解液泄漏，导致电器损坏和/或人身伤害。
- (6) Do not weld or solder directly to batteries. The heat from welding or soldering directly to a battery may cause internal short-circuiting resulting in leakage, explosion and may cause personal injury.
不要直接焊接电池。当直接焊接电池时，电池有可能因受热而损坏，导致内部短路并引起漏液和爆炸，可能导致人身伤害。
- (7) Do not dismantle batteries. When a battery is dismantled or taken apart, contact with the components can be harmful and may cause personal injury.
不要拆解电池。拆解电池，接触电池内部的部件是有害的，可能导致人身伤害。
- (8) Store unused batteries in their original packaging away from metal objects. If already unpacked, do not mix or jumble batteries to avoid them short-circuiting with each other.
将不用的电池放在原包装内，远离易引起短路的金属物体。如果包装已经拆掉，不要把电池混堆在一起，以免电池相互短路。
- (9) Keep batteries out of the reach of children to prevent swallow. In case of ingestion of a cell or a battery, the person involved should seek medical assistance promptly.
电池应存放在儿童拿不到的地方，以免儿童误吞电池。万一误吞电池应马上就医。

13 Warranty Period 保质期

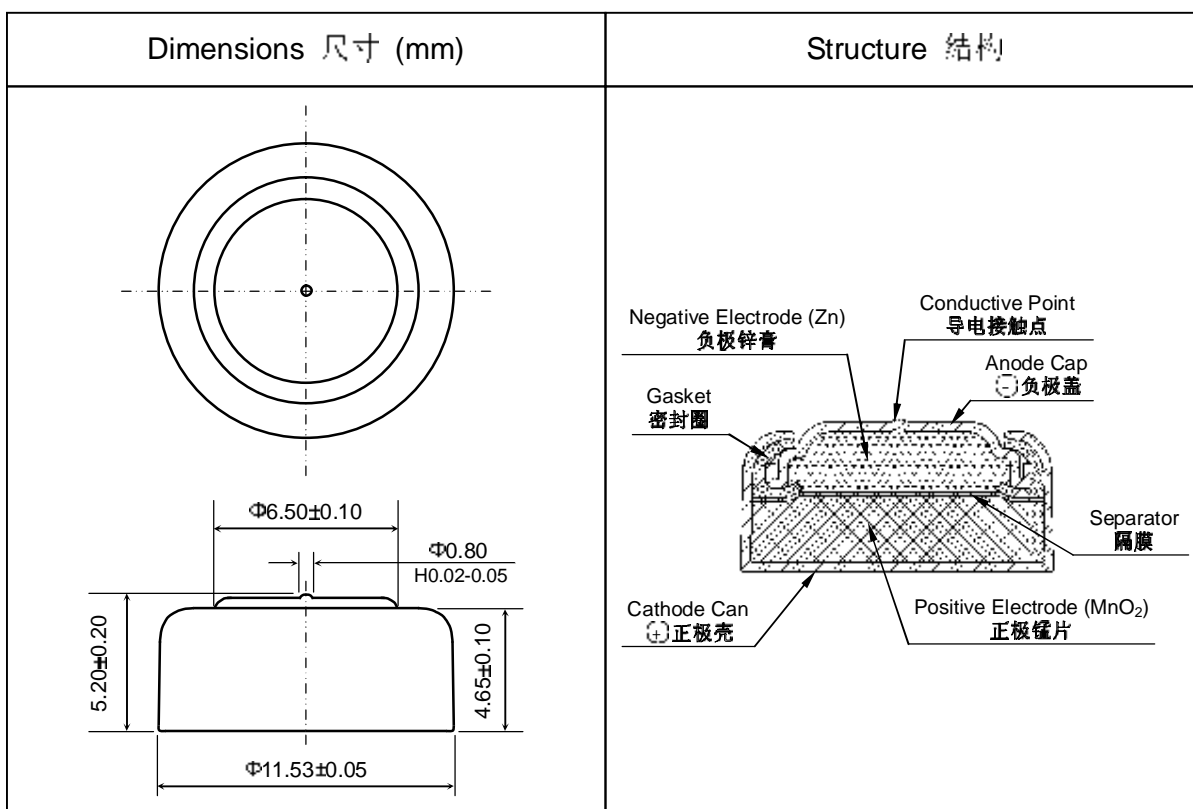
Product described in this specification sheet is comes with 12 months guarantee after delivery where its handling conditions may compliance with this specification sheet section 12 shown.

在遵循本规格书第 12 条情况下，本产品自交货后保质 12 个月。

14 Typical Discharge Characteristics 典型放电特征



15 Dimensions & Structure 尺寸及结构



16 Packing condition 包装数据

100 pieces per blister tray.

每个吸塑盘 100 只。

25 trays / 5,000 pieces per bundle.

每捆 25 盘 / 2,500 只

4 bundles per carton

每箱 4 捆。

Total 10K pieces per carton

每箱 10,000 只

Measurement 尺寸 29.5 X 20 X 30.5 CM

G.W. 毛重 22 Kgs

N.W. 净重 21.5 Kgs

Marking 箱唛:

(1) Month of Ex-factory 出厂月份

Each carton stamping with short form of ex-factory month at the top of carton.

I.e.: January = Jan

在每个外箱的箱面印上出厂月份的简写。例如: January = Jan

(2) Exactly ex-factory date 详细出厂日期

Each carton also stamp with exactly ex-factory date at the top of the carton.

在每个外箱的箱面印上详细的出厂日期。