新利達電池有限公司

NEW LEADER BATTERY LIMITED.

Material Safety Data Sheet for Lithium Button Cell Series

Document Number: MSDS-CR2016-2019

SECTION I – 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 *緊急和資詢電話*：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 II – Hazardous Ingredients / Identity Information *成份表*

IMPORTANT:

Use under normal conditions, the lithium battery is hermetically sealed.鋰錳電池在正常使用下是密封的

Ingestion: Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential of the esophagus. *IMMEDIATELY SEE DOCTOR*; Do not induct vomiting or give food or drink.

誤服 ： 在誤吞鋰錳電池的情況下,誤服了的電池在短時間內會導致化學性燒傷,使食道嚴重灼傷或導致死亡,萬一誤服應立即盡快找就近的醫生診斷,不要給誤服者飲食或企圖把誤服之電池吐出

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

吸入 ： 吸入了開封的電池會刺激呼吸道

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

皮膚接觸 ： 接觸了開封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 ： 如眼睛不慎接觸了電池會導致眼睛刺痛

Important Note: The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful 電池一定不能打開或燃燒,否則內部的化合物曝露在空氣中或燃燒中，會釋放出有害物質

Substance Name/CAS# 名稱/代號	***PEL (OSHA)***	***% Weight***
Lithium 鋰 7439-93-2	None Established	1-8%
Propylene Carbonate 碳酸丙烯酯 108-32-7	None Established	1-9%
Manganese Dioxide 二氧化錳 1313-13-9	5mg/m^3 Celling (as Mn)	10-22%
Dimethoxymethane 二甲氧基甲烷 110-71-4	None Established	0-6%
Lithium Perchlorate 高氯酸鋰 7791-03-09	None Established	0-3%
Carbon Black 炭 1333-86-4	3.5mg/m^3 TWA	0-1%
Dioxolane 二惡茂烷 646-06-0	None Established	0-8%
Graphite 石墨	15mg/m^3 TWA (total Dust)	4%

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7782-42-5	5mg/m^3 TWA (respirable fraction)	
Steel 鋼/鐵 65997-19-5	None Established	32%
Others 其他	None Established	Balance

SECTION III – 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 熔點 : N.A.
Vapor Pressure 蒸氣壓 (mm Hg) : N.A.
Vapor Density 蒸氣密度 (AIR = 1) : N.A.
Evaporation Rate (Buty1 Acetate) : N.A.
Solubility in Water 溶解度 : N.A.
Appearance and Odor 形狀和氣味 , Cylindrical Shape, Odorless 圓柱型 : 無氣味

SECTION IV –Control Fire Measures
In case of fire where lithium batteries are present, flood area with water or smother with a Class D fire extinguishant appropriate for lithium metal, such as lith-X. Water may not extinguish burning batteries but will cool the adjacent batteries and control the spread of fire. Burning batteries will burn themselves out. Virtually all fires involving lithium batteries can be controlled by flooding with water. However, the contents of the battery will react with water and form hydrogen gas. In a confined space, hydrogen gas can from an explosive mixture. In this situation, smothering agents are recommended. A smothering agent will extinguish burning lithium batteries. Emergency Responders should wear self-contained breathing apparatus. Burning lithium manganese dioxide battery produce toxic and corrosive lithium hydroxide fumes. 如遇上鋰電池所引發之火警,應先用水浸淹火災區作冷卻, 然後用 D 型的泡沫滅火器救火,水劑滅火器是不能救熄在燃燒中的鋰電池,但會有效阻止火勢漫延.燃燒中的電池只能燒燼作罷. 實際上很多由鋰電池所引發的火災,都只是會用水浸淹的情況下控制, 但請注意,當鋰電池中的鋰金屬接觸到水份時會產生氫氣,如在通風設備不好的環境下,有機會引起爆炸,因此泡沫劑是廣泛推介應用於鋰電池的火災中.同時在救火時應穿上帶有自供氣式的保護設備,因爲鋰電池在燃燒時會產生帶有毒性的氫氧化鋰之氣體.

SECTION V – Reactivity Data 反應性數據
Stability 穩定性 : stable 穩定
Conditions to Avoid 避免條件 : Stable 穩定
Incompatibility 不相容性 : Materials to Avoid 材質避免
Lithium manganese batteries do not met any of the criteria established in 40CFR 261.2 for reactivity 鋰錳電池的反應性達不到 40CFR 261.2 的標準

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SECTION VI – Health Hazard Data 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 如電解液泄漏了，接觸到皮膚會導致皮膚發痒
In contact with electrolyte can cause severe irritation and chemical burns 接觸到電解液會引致化學性燒傷
Inhalation of electrolyte vapors may cause irritation of the upper respiratory tract and lungs 吸入了蒸發化的電解液，會引致上呼吸道和肺部敏感

SECTION VII – First Aid Measures 急救處理措施
Ingestion: Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential of the esophagus. **IMMEDATELY SEE DOCTOR;** Do not induce vomiting or give food or drink. 誤服 : 在誤吞鋰錳電池的情況下,誤服了的電池在短時間內會導致化學性燒傷,使食道嚴重灼傷或導致死亡,萬一誤服應立即盡快找就近的醫生診斷,不要給誤服者飲食或企圖把誤服之電池吐出
Inhalation : Provide fresh air and seek medical attention. 吸入 : 提供新鮮的空氣和盡快找就近的醫生診斷
Skin Contact : Remove contaminated clothing and wash skin with soap and water 皮膚接觸 : 把受污染的衣物移走和應立即用肥皂水清洗患處
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 : 盡快用清水沖洗 15 分鐘,眨動上下眼皮,直至沒有化學物殘留在眼睛,盡快找就近的醫生診斷

SECTION VIII – 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 : 鋰電池如發生漏液或破損,應把電池移往室內通風地方
Respiratory Protection : Avoid exposure to electrolyte fumes from open or leaking batteries 呼吸道之保護 : 防止吸入已打開或漏液所產生之氣體
Eye Protection: Water safety glasses with side shields if handling an open or leaking batteries 眼部護理 : 應把已打開或漏液之電池,放入已盛載了水的水杯內
Gloves: Use neoprene or natural rubber gloves if handling an open or leaking batteries, 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 IX – Safety Warning for Swallowed Hazardous

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⚠ WARNING

Keep out of reach of children. Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential perforation of the esophagus. Immediately see doctor or ring **LOCAL EMERGENCY CALL.** Keep in original package until ready to use. Dispose of used batteries immediately.

電池應遠離兒童, ,誤服了的電池在短時間內會嚴重引致化學性燒傷,使食道嚴重灼傷或導致死亡,應立刻盡快找就近的醫生診斷或致電當地之緊急救援電話,保留原有的包裝,用完之電池應盡快棄置

SECTION X – Handling and Storage 搬運和儲存

Storage : Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life. In locations that handle large quantities of lithium batteries, such as warehouse, lithium batteries should be isolated from unnecessary combustible.

存放: 請存放在通風及清涼處，高溫的情況會影響電池之壽命,如存放大量的鋰電池，請存放在貨倉內同時應和可燃燒的物品隔離

Mechanical Containment: If potting or sealing the battery in an airtight or watertight container is required, consult your New Leader Battery Limited representative for precautionary suggestions. Do not obstruct safety release vents on batteries, Encapsulation of batteries will not allow cell venting and can cause high pressure rupture.

機械密封 ： 電池必須在一個防水氣和空氣之情況下做焊接或密封之加工,咨詢新利達電池有限公司查詢有關之安全建議.不要忽略已開封電池之安全.已封裝之電池是不容許打開外殼和有機會引起高壓擊破.

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

處理 ： 短暫短路對電池不會有嚴重之影響，短路時間會對電池之容量構成影響，產生高熱影響安全. 把其他電池或金屬物品混合和鋰電放在同一容器內,會對電池產生短路，被破壞之鋰電池在結構內會形成短路.

The contents of an open battery, including a vented battery, when exposed to water, may result in a fire and/or explosion. Crushed or damaged batteries may result in a fire.

處理已開封之電池 ： 包括有開孔的電池，當電池放在水中,有機會引起火警或使電池發生爆炸，撞擊或破壞電池有機會引起火警

If soldering or welding to the battery is required, consult us for proper precaution to prevent seal damage or short circuit.

如需要焊接或點焊加工 ：請與生產商咨詢如何防止破壞電池或令電池發生短路

Charging: This battery is manufactured in a charged state. It 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

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backwards

充電 ： 電池在生產時已有足夠電量,此款電池設計是不適用在充電池上，把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反充.

***SECTION XI* – 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 呼吸道保護: N.A.
Eyes Protection 眼睛保護 ：N.A.
Gloves 手套 ：N.A.

***SECTION XII* – Ecological Information 生態資料 ：N.A.**

***SECTION XIII* – Disposal Method 棄置方法 ：** Dispose of the batteries according to government regulations. 棄置電池方法請參照當地政府之規例

***SECTION XIV* – Regulatory Information 管理的資訊:** Special requirement be according to the local regulations. 特別之要求請參照當地政府之規例

***SECTION XV* – Transport Information 運輸之資訊**

The Batteries in all forms of transportation (e.g. Truck, air, or sea) must be packaged in a safe and responsible manner. Regulatory concerns form all agencies for safe packaging require that batteries be packaged in s manner that prevents short circuits and be contained in (Strong Carton / Packaging) that prevents spillage of contents.
The lithium button cell are exempt from the classification as dangerous goods as they meet the requirements of the special provisions listed below (Essentially, they are properly packaged and labeled, Contains less than 1 gram of lithium and pass the tests defined in UN model regulation section 38.3).
所有電池之運送方式(e.g.航運,空運和陸運)必須要已負責任之態度和安全包裝來運送.所有代理在監管安全包裝的問題上,電池必須要裝放在(加厚紙箱/包裝)防止短路和防電池溢出之包裝容器內.
如達到有關以下危險品之級別之要求的鋰電池則可豁免爲危險品(必須有適當之包裝和標籤,其鋰含量小於 1 克及通過有關 UN38.3 規定之測試)

Regulatory Parties	Special Provisions
ADR	188,230,310,636,656
IMDG	188,230,310,957
UN	UN3090, UN3091
US DOT	29,A54,A101,A100

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IATA, ICAO	Packaging Instructions 968 – 970 (section II)

Ref: Summary of Packing Instruction (2019 IATA Dangerous Goods Regulations 60th Edition) the minimum requirements necessary to transport as non-restricted goods are as follows

參考：以下是在運送非限制品之包裝指示摘要必須跟據(2019 年國際航運協會危險品條例 60 版)最低之要求:,

1. For a lithium metal/lithium alloy cell, the lithium content is not more than 1g.
   所有的鋰金屬/鋰合金電池，鋰片含量不會超過 1 克
2. Each package must be displayed a battery handling label. (Tel no and emergency call must be printed on label)
   每箱電池必須貼上處理電池標籤. (標籤必須印有電話號碼及急救號碼)
3. Each consignment must be accompanied with a declaration of non-dangerous goods document.
   每批貨物必須附上有關非危險品之聲明文件
4. The Original package (NL) must be capable of with standard a 1.2m drop test.
   原廠新利達之包裝是可通過 1.2 米高之跌落測試

SECTION XVII - Lithium Content 鋰之含量

Model No	*Lithium / g*	*Model No:*	*Lithium / g*
CR2450	*Less than 0.496*	*CR2430*	*Less than 0.336*
CR2330	*Less than 0.320*	*CR2320*	*Less than 0.240*
CR2032	*Less than 0.248*	*CR2025*	*Less than 0.200*
CR2016	*Less than 0.144*	*CR1632*	*Less than 0.180*
CR1616	*Less than 0.096*	*CR1620*	*Less than 0.104*
CR1220	*Less than 0.072*	*CR1225*	*Less than 0.080*
CR927	*Less than 0.040*	*CR1216*	*Less than 0.056*

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A global lithium label chart is provided below to summarize the current global labeling requirements

以下是全球有關寄鋰電池所需要提供的有效標籤的參考,個別運輸公司要求有所不同

Shipping Mode 運輸方式	Li Content 鋰含量	Net quantity wt. Of batteries per Package 每個包裝鋰的重量	Battery Type 電池型號			
Air	0.3g to≤1g/cell 0.3g to ≤2g/ Battery	≤2.5kg	L91,L92, L522	YES	YES	YES
	≤0.3g /cell	≤2.5kg	All Li Coin and 2L76	NO	YES	YES
	≤0.3g /cell	≤2.5kg	All Li Coin and 2L76	YES	YES	YES
Land/Sea Only	All	All	All	NO	YES	YES

***SECTION XVI* – Other Information 其他資訊 ：** None

Prepared December 2018