



新普科技股份有限公司
新世電子(常熟)有限公司
新普科技(重慶)有限公司
華普電子(常熟)有限公司
Simplo Technology Co., Ltd.
Simplo Technology(Changshu)Inc.
Simplo Technology(Chongqing)Inc.
Huapu Technology(Changshu)Inc.

SAFETY DATA SHEET

安全技術說明書

Issued/Revised date 發佈/更改日期: October 16 2023

Document No 文件編號.: MI-231016004

1. Product and Company Identification 產品與廠商資料

Product Name 產品名稱: Rechargeable Lithium-Ion Polymer Battery Pack 鋰離子電池組

Project name	MSFT PN	JDM1/LCM1 PN	STCS PN	Configuration
Samani	M1271364-001	0B23-03G50QS	G3HTA101H G3HTA101HB	ATL/11.38V===5609mAh 63.8Wh Min 66Wh Typ
	M1271364-002	TBD	G3HTA101H G3HTA101HB	
	M1271364-003	0B23-03G80QS	G3HTA101H G3HTA101HB	
	M1271364-004	0B23-03G70QS	G3HTA101H G3HTA101HB	
	M1271364-005	0B23-03JE0QS	G3HTA101H G3HTA101HB	
	M1271364-006	0B23-03LR0QS	G3HTA101H G3HTA101HB	ATL/11.38V===5609mAh 63.84Wh Min 66.08Wh Typ
	M1271364-007	0B23-03LS0QS	G3HTA101H G3HTA101HB	
	M1271364-008	0B23-03P50QS	G3HTA101H G3HTA101HB	
	M1271364-009	0B23-03P60QS	G3HTA101H G3HTA101HB	

Details of the supplier of the product 產品供應商的詳細訊息:

Company (Taiwan) 台灣總公司	Name 名稱	SIMPLO TECHNOLOGY CO., LTD. 新普科技股份有限公司
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	Address地址:	No. 471, Sec. 2, Bade Rd., Hu Kou Township, Hsinchu County, 30348, Taiwan 台灣, 新竹縣湖口鄉八德路二段471號
	Telephone電話	+886-3-5695920
	Fax傳真	+886-3-5695931
Manufacturer (Changshu) 製造商(常熟廠)	Name名稱	SIMPLO TECHNOLOGY(CHANGSHU)INC. 新世電子(常熟)有限公司
	Address地址	No.888 Dong Nan Avenue, Chang Shu, Jiang Su Province, China 中國, 江蘇省常熟市高新技術產業開發區東南大道 888 號
	Telephone電話	+86-512-52302255
	Fax傳真	+86-512-52302277
Manufacturer (Chongqing) 製造商(重慶廠)	Name名稱	SIMPLO TECHNOLOGY(CHONGQING) INC 新普科技(重慶)有限公司
	Address地址	NO.2 Zongbao Avenue Shapingba District, Chongqing China 中國, 重慶市沙坪壩綜保大道二號
	Telephone電話	+86-23-61718899
	Fax傳真	+86-23-61710488
Manufacturer (Huapu) 製造商(華普廠)	Name名稱	HUAPU TECHNOLOGY(CHANGSHU)INC. 華普電子(常熟)有限公司
	Address地址	No.888 Dong Nan Avenue, Chang Shu, Jiang Su Province, China 中國, 江蘇省常熟市高新技術產業開發區東南大道 888 號
	Telephone電話	+86-0512-52302255
	Fax傳真	+86- 0512-52302277
Emergency phone number 緊急電話: +886-3-5695920		

2.Hazard(s) identification 危害識別

The battery is considered as an 「article」 The product is outside of the scope of GHS system
 電池被視為「成品」, 產品不在GHS體系涵蓋範圍內

Main Hazards主要危害	When the battery is in extreme pressure deformation, high-temperature environment, overload, short-circuit condition, or disassemble the battery, an explosion of fire and chemical burn hazards may
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	occur. 當電池處於擠壓變形、高溫環境、過載、短路狀態或拆卸電池時，可能會發生爆炸火災和化學灼傷危險。
Health Hazards健康危害	Contact with the electrolyte of battery may be irritating to skin, eyes and mucous membranes. Fire will produce irritating corrosive and/or toxic gases. Fumes may cause dizziness or suffocation 與電池電解液接觸可能會刺激皮膚。眼睛和粘膜。火災會產生刺激性的腐蝕性和/或有毒氣體。煙霧可能導致頭暈或窒息。
Description of any hazards not otherwise classified 其他未分類危險性說明	Do not dismantle, open or shred the battery, the ingredients contained within could be harmful. 請勿拆卸、打開或撕碎電池，其中含有的成分可能有害
Ingredient with unknown acute toxicity 未知的急性毒性成份	No information available. 無資料

3. Composition / Identification on Ingredients 成分組成信息

Mixtures information: ingredients contained within the battery

混合物信息：電池中包含的成分

Chemical name 化學名稱	CAS No.化學品編號	Weight-%重量%
Lithium cobaltate 鈷酸鋰	12190-79-3	44.65%
Graphite 石墨	7782-42-5	24.54%
Copper 銅	7440-50-8	7.96%
Aluminium 鋁	7429-90-5	6.13%
Polyethylene 聚乙烯	9002-88-4	3.60%
Ethyl Methyl Carbonate 碳酸甲乙酯	623-53-0	2.06%
Dimethyl Carbonate 碳酸二甲酯	616-38-6	2.06%
Ethylene carbonate 碳酸乙烯酯	96-49-1	2.06%
propylene carbonate 碳酸丙烯酯	108-32-7	2.06%
Diethyl Carbonate 碳酸二乙酯	105-58-8	2.06%
Lithium hexafluorophosphate	21324-40-3	1.05%



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六氟磷酸鋰		
Nickel 鎳	7440-02-0	0.49%
Poly(ethylene terephthalate) 聚對苯二甲酸乙二醇酯	25038-59-9	0.37%
Nylon-6 尼龍-6	25038-54-4	0.36%
Polypropylene 聚丙烯	9003-07-0	0.30%
Polyacrylic acid 聚丙烯酸	9003-01-4	0.16%
1,3-Propanesultone 1,3-丙烷磺內酯	1120-71-4	0.09%

4. First Aid Measures 急救措施

(a) Description of first aid measures 急救措施說明

Caution! No effect under routine handling and use. If exposure to internal materials within cell due to damaged outer metal casing, the following actions are recommended.

警告！在日常處理和使用下沒有影響。如果由於外部金屬外殼損壞而接觸到電池內部材料，建議採取以下措施。

Inhalation: 吸入	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if you feel unwell. 將傷者轉移到空氣新鮮處，保持呼吸舒適的休息姿勢。 如果您感到不適，請就醫。
Skin contact: 皮膚接觸	Immediately flush skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing and shoes before reuse. Get medical aid. 若接觸到電池內物質，脫去受污染的衣物和鞋襪，立即用清水沖洗15分鐘以上。若刺激持續請就醫。
Eye contact: 眼睛接觸	Rinse cautiously with water for 15-20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. 若接觸到電池內物質，用水小心沖洗 15-20 分鐘。取下隱形眼鏡（如果有且易於操作）。若眼睛刺激持續請就醫
Ingestion 食入	Swallowing battery will be damaged to the respiratory tract and cause chemical burns to the stomach; in serious conditions it will cause Permanent damage. 食入會對呼吸道產生傷害、對腸胃產生燒傷，嚴重會造成永久



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性損害

(b) Most important symptoms/effects, acute and delayed 主要症狀，急性和遲發性效應

No effect under routine handling and use 在日常處理和使用下沒有影響

(c) Immediate medical attention and special treatment 醫療護理和特殊治療

Note to physicians: Treat symptomatically and supportively. 醫生須知：對症治療。

5. Fire Fighting Measures 滅火措施

Suitable extinguishing Media 滅火方法和滅火劑	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. 使用適合當地環境和周圍環境的滅火措施
Unsuitable extinguishing Media 不合適的滅火方法和滅火劑	CAUTION: Use of water spray when fighting fire may be inefficient. 注意：滅火時使用噴水器可能效率降低。
Specific Hazards arising from the chemical 特殊危害	Product is or contains a sensitizer. May cause sensitization by skin contact. 產品或/含有一種導致敏感原，可能因皮膚接觸而引起過敏作用。
Hazardous Combustion Products 危險易燃產品	Carbon oxides. 碳氧化物。
Explosion Data 爆炸資料	Sensitivity to Mechanical Impact: No. 機械衝擊靈敏度：不敏感。 Sensitivity to Static Discharge: No. 靜電靈敏度：不敏感。
Protective Equipment and precautions for firefighters 消防員的防護設備及注意事項	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. 在任何火災中，佩戴自給式呼吸器壓力要求、MSHA/NIOSH (批准或同等) 和全套防護裝備。

6. Accidental Release Measures 洩漏處理方法

Personal precautions, protective equipment and emergency procedures	Personal Precautions: Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use
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作業人員防護措施、防護設備和應急處置程式	personal protective equipment as required. Evacuate personnel to safe areas. 作業人員注意事項：避免接觸皮膚、眼睛或衣服。確保作業場所通風充足，根據需要使用個人防護裝備，疏散人員到安全區域。
Methods and materials for containment and cleaning up 洩露化學品的收容和清理方法	Methods for Containment: Prevent further leakage or spillage if safe to do so. Methods for cleaning up: Pick up and transfer to properly labeled containers. 抑制方法：在安全的情況下防止進一步洩漏或溢出。 清理方法：撿起並轉移到張貼適當標籤的容器中。

7. Handling and Storage處理和儲存

Precautions for safe handling 安全處理的注意事項	Do not expose the battery to excessive physical shock or vibration. Short-circuiting should be avoided. However, accidental short-circuiting for a few seconds will not seriously affect the battery. Prolonged short circuits will cause the battery to rapidly lose energy, could generate enough heat to burn skin. Sources of short circuits include jumbled batteries in bulk containers, coins, metal jewelry, metal covered tables, or metal belts used for assembly of batteries in devices. To minimize risk of short-circuiting, the protective case supplied with the battery should be used to cover the terminals when transporting or storing the battery. Do not disassemble or deform the battery. Should an individual cell within a battery become ruptured, do not allow contact with water. 不要讓電池受到過度的物理衝擊或振動。應避免短路。但是，幾秒鐘的意外短路不會對電池造成嚴重影響。長時間的短路會導致電池迅速失去能量，可能產生足夠的熱量來灼傷皮膚。短路的來源包括散裝容器中的雜亂電池、硬幣、金屬首飾、
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	金屬覆蓋的桌子或用於在設備中組裝電池的金屬帶。為將短路風險降至最低，在運輸或存放電池時，應使用電池隨附的保護盒蓋住端子。請勿拆卸或變形電池。如果電池中的單顆電池發生破裂，請勿與水接觸。
Conditions for safe storage, including any incompatibilities 安全儲存條件，包括任何不相容性	The lithium ion battery should be between 25% and 75% of full charge when stored for a long period of time. Stored in a cool, dry, and well-ventilated area. Elevated temperatures can result in loss of battery performance, leakage, or rust. Do not expose the battery to open flames. 鋰離子電池在長時間存放時應充滿電量的 25% 至 75%。存放在陰涼、乾燥、通風良好的地方。溫度升高會導致電池性能下降、洩漏或生鏽。不要將電池暴露在明火中。

8. Exposure Controls / Personal Protection 接觸控制/個人防護

Appropriate Engineering Controls 適當的工程控制	Choose the suitable ventilation equipment; provide sufficient quantity of fire extinguishers, gas mask and water; equip with metal storage containers and bathing equipment 選擇合理的通風設備，提供足夠數量的防毒面具滅火器及水源，配置存放電池的金屬容器和洗浴設備
Respirator Protection 呼吸系統防護	Normally there is no need to do protection. Wear government approved respirator, if needed 正常情況下無必要作防護 若需要，請佩帶管理部門認可的面罩。
Eye/Face Protection 眼睛/面部防護	Normally there is no need to do protection Wear chemical safety glasses, if needed 正常情況下無必要作防護 若需要，請佩戴安全防護眼鏡
Skin Protection 皮膚防護	Hand protection: Wear safety gloves Foot Protection: Steel toed shoes recommended for large container handling



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	Body protection: Wear appropriate protective clothing 手部防護, 請佩帶安全手套。 足部防護, 處理大量電池時建議穿著鋼頭鞋 身體防護: 穿戴一般作業防護服。
Other Protection 其他防護	No smoking, drinking and eating at working site, Wash thoroughly after handling 工作場所嚴禁吸菸、進食和飲水。工作後淋浴更衣

9. Physical and Chemical Properties 物理和化學特性

Physical Properties 物理特性	Physical state 物理狀態	Solid 固體
	Appearance 外觀	Black Plastics or Mylar film shell 黑色塑膠或聚酯薄膜外殼
	Color 顏色	Black 黑色
	Odor 氣味:	Odorless 無味
	Odor Threshold 嗅覺閾值	No information available 無資料
Chemical Properties 化學特性:		
Property 特性	Values 值	Remarks/ Method 備註
pH 酸鹼度	8~9	None known未知
Melting / freezing point 熔點和冰點	No data available無資料	None known未知
Boiling point / boiling range 沸點/沸程	No data available無資料	None known未知
Flash Point 閃點	No data available無資料	None known未知
Evaporation Rate 蒸發率	No data available無資料	None known未知
Flammability (solid, gas) 易燃性 (固體、氣體)	No data available無資料	None known未知
Flammability Limit in Air 空氣中的易燃性限制 Upper/ Lower flammability 上下燃點限制	No data available無資料	-
Vapor pressure 蒸氣壓力	No data available無資料	None known未知
Vapor density 蒸汽密度	No data available無資料	None known未知
Specific Gravity 比重	No data available無資料	None known未知
Water Solubility 水溶性	No data available無資料	None known未知
Solubility in other solvents	No data available無資料	None known未知



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其他溶劑中的溶解度		
Partition coefficient n-octanol/water: n-辛醇/水分配係數(對數值)	No data available無資料	None known未知
Autoignition temperature 自燃溫度	130°C	None known未知
Decomposition temperature 分解溫度	No data available無資料	None known未知
Kinematic viscosity 運動黏度	No data available無資料	None known未知
Dynamic viscosity 動態黏度	No data available無資料	None known未知
Explosive properties 爆炸特性	No data available無資料	None known未知
Oxidizing Properties 氧化特性	No data available無資料	None known未知

10. Stability and Reactivity 安定性與反應性

Reactivity 反應性	None during normal operating or handling conditions. 在正常操作或處理條件下,無不良反應。
Chemical stability 化學穩定性	Stable under recommended storage conditions. 在推薦的儲存條件下保持穩定。
Possibility of Hazardous Reactions 發生危險反應的可能性	None under normal processing 正常處理下, 無
Hazardous Polymerization 危險聚合	Hazardous polymerization does not occur. 不會發生危險的聚合反應。
Conditions to avoid 應避免的條件	None known based on information supplied. 根據提供的訊息, 未知
Incompatible materials 不相容物質	Strong acids. Strong oxidizing agents. Strong bases. 強酸。強氧化劑
Hazardous Decomposition Products危險分解產物	Carbon oxides. 碳氧化物。

11. Toxicological Information 毒性學信息

(a) Information on the likely routes of exposure 可能接觸的途徑

Product Information 產品資訊	Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture 如有破裂·根據已知或提供的資訊·產品不存在急性毒性危害。
Inhalation 吸入	No effect under routine handling and use for sealed battery. If battery is broken, inhale fume/dust may cause irritation, chemical



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	burns or lung edema. 密封電池在常規處理和使用下無影響。如果電池壞了，吸入煙霧/灰塵可能會引起刺激、化學灼傷或肺水腫。
Eye Contact 眼部接觸	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to eyes. May cause redness, itching, and pain. May cause temporary eye irritation. 沒有關於該物質或混合物的具體測試資料。成分可能是刺激物，刺激眼睛，可能會引起發紅、搔癢和疼痛可能會引起暫時性的眼睛刺激。
Skin Contact 皮膚接觸	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to skin. Prolonged contact may cause redness and irritation. 沒有關於該物質或混合物的具體測試資料。成分可能是刺激物，長時間的接觸皮膚可能會引起發紅和刺激
Ingestion 食入	Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. 沒有關於該物質或混合物的具體測試資料。食入可能會刺激粘膜，也可能引起胃腸道刺激、噁心、嘔吐和腹瀉。

(b) Information on toxicological characteristics 毒理學特徵信息

This product does not elicit toxicological properties during routine handling and use. If the cells are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.
本產品在日常處理和使用過程中不會產生毒理學特性。如果電池因誤用或損壞而打開，請立即丟棄。內部成分是刺激物和過敏原。

Acute Toxicity 急性毒性	No information available. 無資料
Skin corrosion/irritation 皮膚腐蝕/刺激	No information available. 無資料
Serious eye damage/irritation: 嚴重的眼睛損傷/刺激	No information available. 無資料
Respiratory sensitization 呼吸過敏	No information available. 無資料
skin sensitization 皮膚過敏	No information available. 無資料
Carcinogenicity 致癌性	No information available. 無資料
Germ Cell Mutagenicity 生殖細胞致突變性:	No information available. 無資料
Reproductive Toxicity 生殖毒性	No information available. 無資料
STOT-Single Exposure 特定目標器官毒性-單次接觸	No information available. 無資料



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STOT-Repeated Exposure特定目標器官毒性-重覆接觸	No information available. 無資料
Aspiration Hazard吸入危害	No information available. 無資料

12. Ecological Information 生態學信息

Ecotoxicity生態毒性	No information available. 無資料
Persistence and Degradability持久性和降解度	No information available. 無資料
Bioaccumulations Potential潛在的生物累積性	No information available. 無資料
Mobility in soil在土壤中的流動性	No information available. 無資料
Other adverse effects其他有害效應	No information available. 無資料

13. Disposal Consideration 廢棄處置

(a) Disposal methods 處置方法:

Disposal methods: This material, as supplied, is not a hazardous waste according to Federal regulations (40CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

根據聯邦法規(40CFR 261)，材料不是危險廢物，如果與危險廢物混合或以其他方式接觸，經過添加化學品，或加工改變，該材料可能成為危險廢物，請參考40 CFR 261，以確定已改變的材料是否為危險廢物。有關其他要求，請諮詢適當的州、地區或地方法規。

(b) Contaminated Packaging 受污染的包裝

Dispose of in accordance with federal, state and local regulations.

根據聯邦、州和地方法規進行處理

14. Transport Information 運輸信息

(a) Only Lithium Battery During: This report applies to by land, by air by sea.

產品為鋰離子電池單獨運輸：本報告適用於海運、空運和陸運。

Transport 運輸	The product has passed the test items of UN Model Regulations. Manual of Test and Criteria Section 38.3 and UN Model Regulations SP188, 1.2m drop test. The total net weight of the Lithium batteries is less than 10 kg 產品通過了聯合國示範條例的檢測項目。測試和標準手冊第38.3節和聯合國示範條例SP188，1.2m 跌落測試。鋰電池的總淨重小於10公斤
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RID /ADR (2021 Edition) RID /ADR (2021版)	The product is not subject to RID/ADR according to special provision 188 According to 2.2.9.1.7 (g) of RID/ADR (2021 Edition), Manufacturers and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria Part III. sub-section 38.3 paragraph 38.3.5 根據RID/ADR特殊規定188，運輸時不受本規則其他規定限制。根據RID/ADR(2021版)的2.2.9.1.7(g)，鋰電池或電池組的製造商和出廠後的銷售商應提供聯合國《試驗和標準手冊》第三部分第38.3小節第38.3.5段規定的UN38.3試驗概要
IATA DGR (64th Edition): IATA DGR (64版)	UN3480 Hazard Class 9 The product shall meet the General Requirements and section IB of Packaging Instruction 965 According to 3.9.2.6.1(g) of IATA DGR (64th Edition), Manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of tests and Criteria Part III, sub-section 38.3 paragraph 38.3.5. Lithium-ion batteries according to thePI965 Section IB transport listed in this report must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated capacity. 本產品應滿足IATA DGR包裝說明 965的基本要求和第IB部分的規定。根據 IATA DGR (第64版) 的 3.9.2.6.1(g) · 2003年6月30日之後生產的鋰電池或電池組的製造商和出廠後的銷售商應提供聯合國《試驗和標準手冊》。第三部分第38.3小節第38.3.5段規定的UN38.3試驗概要。 The International Civil Aviation Organization (ICAO) Technical Instructions Packing instruction 965 section IB (2023-2024 Edition) 國際民用航空組織 (ICAO) 技術說明包裝說明965部分IB (2023-2024版) Lithium-ion batteries according to thePI965 Section IB transport listed in this report must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated capacity. 根據本報告中列出的PI965第IB節運輸的鋰離子電池必須以不超過其額定容量30% 的充電狀態(SoC)進行運輸。



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IMO IMDC CODE (2020 Edition) IMO IMDC CODE (2020版)	Special provision 188 of the 《International Maritime Dangerous Goods (IMDG) Code》 (Amendment 40-20 Edition) Distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3 paragraph 38.3.5 《國際海上危險貨物(IMDG)規範》(修正案40-20版)第188條鋰電池或電池組的製造商和出廠後的銷售商應提供聯合國《試驗和標準手冊》。第三部分第38.3小節第38.3.5段規定的UN38.3試驗概要
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(b) Test results of the UN Recommendation on the Transport of Dangerous Goods
聯合國關於危險貨物運輸的建議的測試結果

Manual of Test and Criteria (38.3 Lithium battery) 測試和標準手冊 (38.3鋰電池)			
No 編號	Test item 項目	Test Results 測試結果	Remark備註
T1	Altitude Simulation高度模擬測試	Pass通過	
T2	Thermal Test加熱測試	Pass通過	
T3	Vibration振動測試	Pass通過	
T4	Shock衝擊測試	Pass通過	
T5	External Short Circuit外部短路測試	Pass通過	
T6	Impact/Crush擠壓測試	Pass通過	
T7	Overcharge過度充電測試	Pass通過	
T8	Forced Discharge強制放電測試	Pass通過	

(c) UN regulation 聯合國法規

UN3480	Batteries only, IATA Dangerous Goods Regulations, packing instruction 965 Section IB. 純電池包裝, 適用 IATA 危險貨物規則, 滿足包裝說明 965 的基本要求和第 IB 部分的規定。
UN3481	Lithium ion batteries packed with equipment, IATA Dangerous Goods Regulations, packing instruction 966 Section II 鋰離子電池和設備一起包裝, 適用 IATA 危險貨物規則, 滿足包裝說明 966 的基本要求和第二部分的規定。
UN3481	Lithium ion batteries contained in equipment, IATA Dangerous Goods Regulations, packing instruction 967 Section II. 鋰離子電池含於設備中, 適用IATA危險貨物規例, 滿足包裝說明967的基本要求和第二部分的規定。



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15. Regulatory Information 法規信息

Dangerous Goods Regulations 《危險品規則》

IMO International Maritime Dangerous Goods Code relevant regulations 《國際海運危險貨物規則》

Refer to U. N., national, local regulations. 參照聯合國·國家·地方性法規。

16. Other Information 其他信息

(a) Preparation and revision information 編制和修訂信息

The information contained in this Safety data sheet is based on the present state of knowledge and current legislation.

This safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications

The information contained in this Safety data sheet is based on the present state of knowledge and current legislation

本安全數據表中包含的信息基於當前的知識狀況和現行法規。

本安全數據表提供有關產品健康、安全和環境方面的指導，不應解釋為對特定應用的技術性能或適用性的任何保證 本安全數據表中包含的信息基於當前的知識狀態和當前立法。

(b) Abbreviations and acronyms 縮略語和首字母縮寫

ACGIH	American Conference of Governmental Industrial Hygienists 美國政府工業衛生學家委員會
OSHA:	The United States Occupational Safety and Health Administration. 美國職業安全與健康管理局
GHS	Globally Harmonized System of Classification and Labelling of Chemicals 全球化學品統一分類和標籤制度
CAS	Chemical Abstracts Service美國化學文摘社
DOT	US Department Of Transportation美國交通部
RID	Regulation for rail International transportation 國際鐵路危險貨物運輸規則
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road 關於公路運輸危險貨物歐洲協定
IMO IMDC CODE	International Maritime Organization, International Maritime Dangerous Goods Code 國際海事組織,國際海運危險或貨物規則
ICAO	International Civil Aviation Organization國際民用航空組織
IATA	International Air Transport Association國際航空運輸協會



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PI	Packaging Instruction 包裝說明
TSCA	Toxic Substances Control Act, The American chemical inventory. 美國化學品有毒物質控制法，
IECSC	Inventory of existing chemical substances in China. 中國現有化學物質清單

(c) Disclaimer免責聲明

The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.

本SDS中的信息完整、真實地提供了所有相關數據。但是，提供的信息不保證其絕對的廣泛性和準確性。本SDS旨在為受過專業培訓的用戶提供安全預防措施。獲取本SDS的個人用戶應對本SDS在特殊情況下的適用性做出獨立判斷。在這些特殊情況下，我們不對損壞承擔責任

----- End of the SDS -----



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SAFETY DATA SHEET

安全技術說明書

Issued/Revised date 發佈/更改日期: October 16 2023

Document No 文件編號.: MI-231016001

1. Product and Company Identification 產品與廠商資料

Product Name 產品名稱: Rechargeable Lithium-Ion Polymer Battery Pack 鋰離子電池組

Project name	MSFT PN	JDM1/LCM1 PN	STCS PN	Configuration
Malauli	M1215510-010	0B23-03F60QS	G3HTA077H G3HTA077HB	ATL/11.38V---4598mAh 52.3Wh Min 54.1Wh Typ
	M1215510-011	0B23-03FY0QS	G3HTA077H G3HTA077HB	
	M1215510-013	0B23-03LN0QS	G3HTA077H G3HTA077HB	ATL/11.38V---4598mAh 52.33Wh Min 54.12Wh Typ
	M1215510-014	0B23-03NQ0QS	G3HTA077H G3HTA077HB	

Details of the supplier of the product 產品供應商的詳細訊息:

Company (Taiwan) 台灣總公司	Name 名稱	SIMPLO TECHNOLOGY CO., LTD. 新普科技股份有限公司
	Address 地址:	No. 471, Sec. 2, Bade Rd., Hu Kou Township, Hsinchu County, 30348, Taiwan 台灣, 新竹縣湖口鄉八德路二段471號
	Telephone 電話	+886-3-5695920
	Fax 傳真	+886-3-5695931
Manufacturer (Changshu) 製造商(常熟廠)	Name 名稱	SIMPLO TECHNOLOGY(CHANGSHU)INC. 新世電子(常熟)有限公司
	Address 地址	No.888 Dong Nan Avenue, Chang Shu, Jiang Su Province, China 中國, 江蘇省常熟市高新技術產業開發區東南大道 888 號
	Telephone 電話	+86-512-52302255



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	Fax傳真	+86-512-52302277
Manufacturer (Chongqing) 製造商(重慶廠)	Name名稱	SIMPLO TECHNOLOGY(CHONGQING) INC 新普科技(重慶)有限公司
	Address地址	NO.2 Zongbao Avenue Shapingba District, Chongqing China 中國, 重慶市沙坪壩綏保大道二號
	Telephone電話	+86-23-61718899
	Fax傳真	+86-23-61710488
Manufacturer (Huapu) 製造商(華普廠)	Name名稱	HUAPU TECHNOLOGY(CHANGSHU)INC. 華普電子(常熟)有限公司
	Address地址	No.888 Dong Nan Avenue, Chang Shu, Jiang Su Province, China 中國, 江蘇省常熟市高新技術產業開發區東南大道 888 號
	Telephone電話	+86-0512-52302255
	Fax傳真	+86- 0512-52302277
Emergency phone number 緊急電話: +886-3-5695920		

2.Hazard(s) identification 危害識別

The battery is considered as an 「article」 The product is outside of the scope of GHS system
 電池被視為「成品」, 產品不在GHS體系涵蓋範圍內

Main Hazards主要危害	When the battery is in extreme pressure deformation, high-temperature environment, overload, short-circuit condition, or disassemble the battery, an explosion of fire and chemical burn hazards may occur. 當電池處於擠壓變形、高溫環境、過載、短路狀態或拆卸電池時, 可能會發生爆炸火災和化學灼傷危險。
Health Hazards健康危害	Contact with the electrolyte of battery may be irritating to skin. eyes and mucous membranes. Fire will produce irritating corrosive and/or toxic gases. Fumes may cause dizziness or suffocation 與電池電解液接觸可能會刺激皮膚。眼睛和粘膜。火災會產生刺激性的腐蝕性和/或有毒氣體。煙霧可能導致頭暈或窒息。
Description of any hazards not otherwise classified	Do not dismantle, open or shred the battery, the



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其他未分類危險性說明	ingredients contained within could be harmful. 請勿拆卸、打開或撕碎電池，其中含有的成分可能有害
Ingredient with unknown acute toxicity 未知的急性毒性成份	No information available. 無資料

3. Composition / Identification on Ingredients 成分組成信息

Mixtures information: ingredients contained within the battery

混合物信息：電池中包含的成分

Chemical name 化學名稱	CAS No.化學品編號	Weight-%重量%
Lithium cobaltate 鈷酸鋰	12190-79-3	42.38%
Graphite 石墨	7782-42-5	23.36%
Copper 銅	7440-50-8	11.82%
Aluminium 鋁	7429-90-5	6.95%
Polyethylene 聚乙烯	9002-88-4	3.13%
Ethyl Methyl Carbonate 碳酸甲乙酯	623-53-0	1.99%
Dimethyl Carbonate 碳酸二甲酯	616-38-6	1.99%
Ethylene carbonate 碳酸乙烯酯	96-49-1	1.99%
propylene carbonate 碳酸丙烯酯	108-32-7	1.99%
Diethyl Carbonate 碳酸二乙酯	105-58-8	1.99%
Lithium hexafluorophosphate 六氟磷酸鋰	21324-40-3	1.08%
Poly(ethylene terephthalate) 聚對苯二甲酸乙二醇酯	25038-59-9	0.38%
Nickel 鎳	7440-02-0	0.37%
1,3-Propanesultone 1,3-丙烷磺內酯	1120-71-4	0.34%
Nylon-6 尼龍-6	25038-54-4	0.24%

4. First Aid Measures 急救措施

(a) Description of first aid measures 急救措施說明



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Caution! No effect under routine handling and use. If exposure to internal materials within cell due to damaged outer metal casing, the following actions are recommended.

警告！ 在日常處理和使用下沒有影響。如果由於外部金屬外殼損壞而接觸到電池內部材料，建議採取以下措施。

Inhalation: 吸入	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if you feel unwell. 將傷者轉移到空氣新鮮處，保持呼吸舒適的休息姿勢。 如果您感到不適，請就醫。
Skin contact: 皮膚接觸	Immediately flush skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing and shoes before reuse. Get medical aid. 若接觸到電池內物質，脫去受汙染的衣物和鞋襪，立即用清水沖洗15分鐘以上。若刺激持續請就醫。
Eye contact: 眼睛接觸	Rinse cautiously with water for 15-20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. 若接觸到電池內物質，用水小心沖洗 15-20 分鐘。取下隱形眼鏡（如果有且易於操作）。若眼睛刺激持續請就醫
Ingestion 食入	Swallowing battery will be damaged to the respiratory tract and cause chemical burns to the stomach; in serious conditions it will cause Permanent damage. 食入會對呼吸道產生傷害、對腸胃產生燒傷，嚴重會造成永久性損害

(b) Most important symptoms/effects, acute and delayed 主要症狀，急性和遲發性效應

No effect under routine handling and use 在日常處理和使用下沒有影響

(c) Immediate medical attention and special treatment 醫療護理和特殊治療

Note to physicians: Treat symptomatically and supportively. 醫生須知：對症治療。

5. Fire Fighting Measures滅火措施

Suitable extinguishing Media 滅火方法和滅火劑	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. 使用適合當地環境和周圍環境的滅火措施
Unsuitable extinguishing Media	CAUTION: Use of water spray when fighting fire



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不合適的滅火方法和滅火劑	may be inefficient. 注意：滅火時使用噴水器可能效率降低。
Specific Hazards arising from the chemical 特殊危害	Product is or contains a sensitizer. May cause sensitization by skin contact. 產品或/含有一種導致敏感原，可能因皮膚接觸而引起過敏作用。
Hazardous Combustion Products 危險易燃產品	Carbon oxides. 碳氧化物。
Explosion Data 爆炸資料	Sensitivity to Mechanical Impact: No. 機械衝擊靈敏度：不敏感。 Sensitivity to Static Discharge: No. 靜電靈敏度：不敏感。
Protective Equipment and precautions for firefighters 消防員的防護設備及注意事項	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. 在任何火災中，佩戴自給式呼吸器壓力要求、MSHA/NIOSH (批准或同等) 和全套防護裝備。

6. Accidental Release Measures 洩漏處理方法

Personal precautions, protective equipment and emergency procedures 作業人員防護措施、防護設備和應急處置程式	Personal Precautions: Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. 作業人員注意事項：避免接觸皮膚、眼睛或衣服。確保作業場所通風充足，根據需要使用個人防護裝備，疏散人員到安全區域。
Methods and materials for containment and cleaning up 洩露化學品的收容和清理方法	Methods for Containment: Prevent further leakage or spillage if safe to do so. Methods for cleaning up: Pick up and transfer to properly labeled containers. 抑制方法：在安全的情況下防止進一步洩漏或溢出。 清理方法：撿起並轉移到張貼適當標籤的容器中。

7. Handling and Storage 處理和儲存

Precautions for safe handling	Do not expose the battery to excessive physical
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安全處理的注意事項	shock or vibration. Short-circuiting should be avoided. However, accidental short-circuiting for a few seconds will not seriously affect the battery. Prolonged short circuits will cause the battery to rapidly lose energy, could generate enough heat to burn skin. Sources of short circuits include jumbled batteries in bulk containers, coins, metal jewelry, metal covered tables, or metal belts used for assembly of batteries in devices. To minimize risk of short-circuiting, the protective case supplied with the battery should be used to cover the terminals when transporting or storing the battery. Do not disassemble or deform the battery. Should an individual cell within a battery become ruptured, do not allow contact with water. 不要讓電池受到過度的物理衝擊或振動。應避免短路。但是，幾秒鐘的意外短路不會對電池造成嚴重影響。長時間的短路會導致電池迅速失去能量，可能產生足夠的熱量來灼傷皮膚。短路的來源包括散裝容器中的雜亂電池、硬幣、金屬首飾、金屬覆蓋的桌子或用於在設備中組裝電池的金屬帶。為將短路風險降至最低，在運輸或存放電池時，應使用電池隨附的保護盒蓋住端子。請勿拆卸或變形電池。如果電池中的單顆電池發生破裂，請勿與水接觸。
Conditions for safe storage, including any incompatibilities 安全儲存條件，包括任何不相容性	The lithium ion battery should be between 25% and 75% of full charge when stored for a long period of time. Stored in a cool, dry, and well-ventilated area. Elevated temperatures can result in loss of battery performance, leakage, or rust. Do not expose the battery to open flames. 鋰離子電池在長時間存放時應充滿電量的 25% 至 75%。存放在陰涼、乾燥、通風良好的地方。溫度升高會導致電池性能下降、洩漏或生鏽。不要將電池暴露在明火中。



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8. Exposure Controls / Personal Protection 接觸控制/個人防護

Appropriate Engineering Controls 適當的工程控制	Choose the suitable ventilation equipment; provide sufficient quantity of fire extinguishers, gas mask and water; equip with metal storage containers and bathing equipment 選擇合理的通風設備，提供足夠數量的防毒面具滅火器及水源，配置存放電池的金屬容器和洗浴設備
Respirator Protection 呼吸系統防護	Normally there is no need to do protection. Wear government approved respirator, if needed 正常情況下無必要作防護 若需要,請佩帶管理部門認可的面罩.
Eye/Face Protection 眼睛/面部防護	Normally there is no need to do protection Wear chemical safety glasses, if needed 正常情況下無必要作防護 若需要, 請佩戴安全防護眼鏡
Skin Protection 皮膚防護	Hand protection: Wear safety gloves Foot Protection: Steel toed shoes recommended for large container handling Body protection: Wear appropriate protective clothing 手部防護, 請佩帶安全手套。 足部防護, 處理大量電池時建議穿著鋼頭鞋 身體防護：穿戴一般作業防護服。
Other Protection 其他防護	No smoking, drinking and eating at working site, Wash thoroughly after handling 工作場所嚴禁吸菸、進食和飲水。工作後淋浴更衣

9. Physical and Chemical Properties 物理和化學特性

Physical Properties 物理特性	Physical state 物理狀態	Solid 固體
	Appearance 外觀	Black Plastics or Mylar film shell 黑色塑膠或聚酯薄膜外殼
	Color 顏色	Black 黑色
	Odor 氣味:	Odorless 無味
	Odor Threshold 嗅覺閾值	No information available 無資料



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Chemical Properties 化學特性:

Property 特性	Values 值	Remarks/ Method 備註
pH 酸鹼度	8~9	None known未知
Melting / freezing point 熔點和冰點	No data available無資料	None known未知
Boiling point / boiling range 沸點/沸程	No data available無資料	None known未知
Flash Point 閃點	No data available無資料	None known未知
Evaporation Rate 蒸發率	No data available無資料	None known未知
Flammability (solid, gas) 易燃性 (固體、氣體)	No data available無資料	None known未知
Flammability Limit in Air 空氣中的易燃性限制 Upper/ Lower flammability 上下燃點限制	No data available無資料	-
Vapor pressure 蒸氣壓力	No data available無資料	None known未知
Vapor density 蒸汽密度	No data available無資料	None known未知
Specific Gravity 比重	No data available無資料	None known未知
Water Solubility 水溶性	No data available無資料	None known未知
Solubility in other solvents 其他溶劑中的溶解度	No data available無資料	None known未知
Partition coefficient n-octanol/water: n-辛醇/水分配係數(對數值)	No data available無資料	None known未知
Autoignition temperature 自燃溫度	130°C	None known未知
Decomposition temperature 分解溫度	No data available無資料	None known未知
Kinematic viscosity 運動黏度	No data available無資料	None known未知
Dynamic viscosity 動態黏度	No data available無資料	None known未知
Explosive properties 爆炸特性	No data available無資料	None known未知
Oxidizing Properties 氧化特性	No data available無資料	None known未知

10. Stability and Reactivity 安定性與反應性

Reactivity 反應性	None during normal operating or handling conditions.
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	在正常操作或處理條件下,無不良反應。
Chemical stability 化學穩定性	Stable under recommended storage conditions. 在推薦的儲存條件下保持穩定。
Possibility of Hazardous Reactions 發生危險反應的可能性	None under normal processing 正常處理下, 無
Hazardous Polymerization 危險聚合	Hazardous polymerization does not occur. 不會發生危險的聚合反應。
Conditions to avoid 應避免的條件	None known based on information supplied. 根據提供的訊息, 未知
Incompatible materials 不相容物質	Strong acids. Strong oxidizing agents. Strong bases. 強酸。強氧化劑
Hazardous Decomposition Products 危險分解產物	Carbon oxides. 碳氧化物。

11. Toxicological Information 毒性學信息

(a) Information on the likely routes of exposure 可能接觸的途徑

Product Information 產品資訊	Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture 如有破裂, 根據已知或提供的資訊, 產品不存在急性毒性危害。
Inhalation 吸入	No effect under routine handling and use for sealed battery. If battery is broken, inhale fume/dust may cause irritation, chemical burns or lung edema. 密封電池在常規處理和使用下無影響。如果電池壞了, 吸入煙霧/灰塵可能會引起刺激、化學灼傷或肺水腫。
Eye Contact 眼部接觸	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to eyes. May cause redness, itching, and pain. May cause temporary eye irritation. 沒有關於該物質或混合物的具體測試資料。成分可能是刺激物, 刺激眼睛, 可能會引起發紅、搔癢和疼痛可能會引起暫時性的眼睛刺激。
Skin Contact 皮膚接觸	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to skin. Prolonged contact may cause redness and irritation. 沒有關於該物質或混合物的具體測試資料。成分可能是刺激物, 長時間的接觸皮膚可能會引起發紅和刺激
Ingestion 食入	Specific test data for the substance or mixture is not available.



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	Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. 沒有關於該物質或混合物的具體測試資料。食入可能會刺激粘膜，也可能引起胃腸道刺激、噁心、嘔吐和腹瀉。
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(b) Information on toxicological characteristics 毒理學特徵信息

This product does not elicit toxicological properties during routine handling and use. If the cells are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.
 本產品在日常處理和使用過程中不會產生毒理學特性。如果電池因誤用或損壞而打開，請立即丟棄。內部成分是刺激物和過敏原。

Acute Toxicity 急性毒性	No information available. 無資料
Skin corrosion/irritation 皮膚腐蝕/刺激	No information available. 無資料
Serious eye damage/irritation: 嚴重的眼睛損傷/刺激	No information available. 無資料
Respiratory sensitization 呼吸過敏	No information available. 無資料
skin sensitization 皮膚過敏	No information available. 無資料
Carcinogenicity 致癌性	No information available. 無資料
Germ Cell Mutagenicity 生殖細胞致突變性:	No information available. 無資料
Reproductive Toxicity 生殖毒性	No information available. 無資料
STOT-Single Exposure 特定目標器官毒性-單次接觸	No information available. 無資料
STOT-Repeated Exposure 特定目標器官毒性-重覆接觸	No information available. 無資料
Aspiration Hazard 吸入危害	No information available. 無資料

12. Ecological Information 生態學信息

Ecotoxicity 生態毒性	No information available. 無資料
Persistence and Degradability 持久性和降解度	No information available. 無資料
Bioaccumulations Potential 潛在的生物累積性	No information available. 無資料
Mobility in soil 在土壤中的流動性	No information available. 無資料
Other adverse effects 其他有害效應	No information available. 無資料

13. Disposal Consideration 廢棄處置

(a) Disposal methods 處置方法:

Disposal methods: This material, as supplied, is not a hazardous waste according to Federal regulations (40CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or



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otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

根據聯邦法規(40CFR 261)，材料不是危險廢物，如果與危險廢物混合或以其他方式接觸，經過添加化學品，或加工改變，該材料可能成為危險廢物，請參考40 CFR 261，以確定已改變的材料是否為危險廢物。有關其他要求，請諮詢適當的州、地區或地方法規。

(b) Contaminated Packaging 受污染的包裝

Dispose of in accordance with federal, state and local regulations.

根據聯邦、州和地方法規進行處理

14. Transport Information運輸信息

(a) Only Lithium Battery During: This report applies to by land, by air by sea.

產品為鋰離子電池單獨運輸：本報告適用於海運、空運和陸運。

Transport 運輸	The product has passed the test items of UN Model Regulations. Manual of Test and Criteria Section 38.3 and UN Model Regulations SP188, 1.2m drop test. The total net weight of the Lithium batteries is less than 10 kg 產品通過了聯合國示範條例的檢測項目。測試和標準手冊第38.3節和聯合國示範條例SP188，1.2m 跌落測試。鋰電池的總淨重小於10公斤
RID /ADR (2021 Edition) RID /ADR (2021版)	The product is not subject to RID/ADR according to special provision 188 According to 2.2.9.1.7 (g) of RID/ADR (2021 Edition), Manufacturers and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria Part III. sub-section 38.3 paragraph 38.3.5 根據RID/ADR特殊規定188，運輸時不受本規則其他規定限制。根據RID/ADR(2021版)的2.2.9.1.7(g)，鋰電池或電池組的製造商和出廠後的銷售商應提供聯合國《試驗和標準手冊》第三部分第38.3小節第38.3.5段規定的UN38.3試驗概要
IATA DGR (64th Edition): IATA DGR (64版)	UN3480 Hazard Class 9 The product shall meet the General Requirements and section IB of Packaging Instruction 965 According to 3.9.2.6.1(g) of IATA DGR (64th Edition), Manufacturers and subsequent distributors of cells or



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	batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of tests and Criteria Part III, sub-section 38.3 paragraph 38.3.5. Lithium-ion batteries according to the PI965 Section IB transport listed in this report must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated capacity. 本產品應滿足 IATA DGR 包裝說明 965 的基本要求和第 IB 部分的規定。根據 IATA DGR (第 64 版) 的 3.9.2.6.1(g) · 2003 年 6 月 30 日之後生產的鋰電池或電池組的製造商和出廠後的銷售商應提供聯合國《試驗和標準手冊》。第三部分第 38.3 小節第 38.3.5 段規定的 UN38.3 試驗概要。
	The International Civil Aviation Organization (ICAO) Technical Instructions Packing instruction 965 section IB (2023-2024 Edition) 國際民用航空組織 (ICAO) 技術說明包裝說明 965 部分 IB (2023-2024 版)
	Lithium-ion batteries according to the PI965 Section IB transport listed in this report must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated capacity. 根據本報告中列出的 PI965 第 IB 節運輸的鋰離子電池必須以不超過其額定容量 30% 的充電狀態 (SoC) 進行運輸。
IMO IMDC CODE (2020 Edition) IMO IMDC CODE (2020 版)	Special provision 188 of the 《International Maritime Dangerous Goods (IMDG) Code》 (Amendment 40-20 Edition) Distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3 paragraph 38.3.5 《國際海上危險貨物 (IMDG) 規範》 (修正案 40-20 版) 第 188 條 鋰電池或電池組的製造商和出廠後的銷售商應提供聯合國《試驗和標準手冊》。第三部分第 38.3 小節第 38.3.5 段規定的 UN38.3 試驗概要

(b) Test results of the UN Recommendation on the Transport of Dangerous Goods
聯合國關於危險貨物運輸的建議的測試結果

Manual of Test and Criteria (38.3 Lithium battery) 測試和標準手冊 (38.3 鋰電池)			
No 編號	Test item 項目	Test Results 測試結果	Remark 備註
T1	Altitude Simulation 高度模擬測試	Pass 通過	
T2	Thermal Test 加熱測試	Pass 通過	



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T3	Vibration振動測試	Pass通過	
T4	Shock衝擊測試	Pass通過	
T5	External Short Circuit外部短路測試	Pass通過	
T6	Impact/Crush擠壓測試	Pass通過	
T7	Overcharge過度充電測試	Pass通過	
T8	Forced Discharge強制放電測試	Pass通過	

(c) UN regulation 聯合國法規

UN3480	Batteries only, IATA Dangerous Goods Regulations, packing instruction 965 Section IB. 純電池包裝，適用 IATA 危險貨物規則，滿足包裝說明 965 的基本要求和第 IB 部分的規定。
UN3481	Lithium ion batteries packed with equipment, IATA Dangerous Goods Regulations, packing instruction 966 Section II 鋰離子電池和設備一起包裝，適用 IATA 危險貨物規則，滿足包裝說明 966 的基本要求和第二部分的規定。
UN3481	Lithium ion batteries contained in equipment, IATA Dangerous Goods Regulations, packing instruction 967 Section II. 鋰離子電池含於設備中，適用IATA危險貨物規例，滿足包裝說明967的基本要求和第二部分的規定。

15. Regulatory Information 法規信息

Dangerous Goods Regulations 《危險品規則》

IMO International Maritime Dangerous Goods Code relevant regulations 《國際海運危險貨物規則》

Refer to U. N., national, local regulations. 參照聯合國，國家，地方性法規。

16. Other Information 其他信息

(a) Preparation and revision information 編制和修訂信息

The information contained in this Safety data sheet is based on the present state of knowledge and current legislation.

This safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications

The information contained in this Safety data sheet is based on the present state of knowledge and current legislation

本安全數據表中包含的信息基於當前的知識狀況和現行法規。

本安全數據表提供有關產品健康、安全和環境方面的指導，不應解釋為對特定應用的技術性能或適



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用性的任何保證 本安全數據表中包含的信息基於當前的知識狀態和當前立法。

(b) Abbreviations and acronyms 縮略語和首字母縮寫

ACGIH	American Conference of Governmental Industrial Hygienists 美國政府工業衛生學家委員會
OSHA:	The United States Occupational Safety and Health Administration. 美國職業安全與健康管理局
GHS	Globally Harmonized System of Classification and Labelling of Chemicals 全球化學品統一分類和標籤制度
CAS	Chemical Abstracts Service美國化學文摘社
DOT	US Department Of Transportation美國交通部
RID	Regulation for rail International transportation 國際鐵路危險貨物運輸規則
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road 關於公路運輸危險貨物歐洲協定
IMO IMDC CODE	International Maritime Organization, International Maritime Dangerous Goods Code 國際海事組織,國際海運危險或貨物規則
ICAO	International Civil Aviation Organization國際民用航空組織
IATA	International Air Transport Association國際航空運輸協會
PI	Packaging Instruction 包裝說明
TSCA	Toxic Substances Control Act, The American chemical inventory. 美國化學品有毒物質控制法 ,
IECSC	Inventory of existing chemical substances in China. 中國現有化學物質清單

(c) Disclaimer免責聲明

The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.

本SDS中的信息完整、真實地提供了所有相關數據。但是，提供的信息不保證其絕對的廣泛性和準確性。本SDS旨在為受過專業培訓的用戶提供安全預防措施。獲取本SDS的個人用戶應對本SDS在特殊情況下的適用性做出獨立判斷。在這些特殊情況下，我們不對損壞承擔責任

----- End of the SDS -----



新普科技股份有限公司
新世電子(常熟)有限公司
新普科技(重慶)有限公司
華普電子(常熟)有限公司
Simplo Technology Co., Ltd.
Simplo Technology(Changshu)Inc.
Simplo Technology(Chongqing)Inc.
Huapu Technology(Changshu)Inc.

SAFETY DATA SHEET

Date of issue 31-10-2023

Canada/English

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Rechargeable Lithium ion Polymer Battery MQ29

Other means of identification

Recommended use of the chemical and restrictions on use

Recommended Use LITHIUM ION BATTERIES

Uses advised against No information available

Details of the supplier of the safety data sheet

Initial supplier identifier Sunwoda Electronic Co., Ltd.

Address Floor 1,A,B,D District of Floor 2 and Floor 3 to 9 of Comprehensive Building, No.2 Yihe Road, Shilong Community, Shiyao Street, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Telephone 0755-29516888

E-mail xiangjing@sunwoda.com

Emergency telephone number

Company Emergency Phone Number 0755-29516888

2. HAZARDS IDENTIFICATION

Classification

This is a battery. In case of rupture:

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Danger

Hazard statements

This is a battery. In case of rupture:

Causes skin irritation
Causes serious eye irritation
Suspected of causing cancer

Causes damage to organs through prolonged or repeated exposure



Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood Wear protective gloves/protective clothing/eye protection/face protection Wash face, hands and any exposed skin thoroughly after handling

Do not breathe dust/fume/gas/mist/vapors/spray Do not eat, drink or smoke when using this product

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention

Skin

IF ON SKIN: Wash with plenty of water and soap

If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before reuse

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

Very toxic to aquatic life with long lasting effects

Unknown acute toxicity

30.9 % of the mixture consists of ingredient(s) of unknown toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable.

Mixture

Chemical name	CAS-No	Percent(%) Max	Hazardous Information Act registry number (HMIRA registry #)	Material Review number	Date HMIRA filed and date exemption granted (if applicable)
Lithium Cobalt Oxide	12190-79-3	40%			
Copper	7440-50-8	7%	-		-
Aluminum	7429-90-5	6%	-		-
Graphite	7782-42-5	18%	-		-
Ethylene carbonate	96-49-1	6%	-		-
Propylene carbonate	108-32-7	5%	-		-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	4%	-		-
1,3-Propane sultone	1120-71-4	0.2%	-		-
Polyethylene	9002-88-4	1%	-		-
Ci 77266	1333-86-4	1%			
Sodium carboxymethyl cellulose	9004-32-4	0.3%			
Ethylene-Propylene polymer	9010-79-1	0.6%			
1,1-Difluoroethylene polymer	24937-79-9	1%			
Styrene-Butadiene polyme	9003-55-8	0.4%			
ALUMINUM DIOXIDE	11092-32-3	0.5%			
Scandium	7440-2-0	1%			
4-Fluoro-1,3-dioxolan-2-one	114435-02-8	2%			
Diethyl carbonate	105-58-8	6%			

4. FIRST AID MEASURES

First aid measures

General advice	First aid is upon rupture of sealed battery. IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical .	No information available
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Hazardous Combustion Products	Carbon oxides.
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Explosion Data

Sensitivity to Mechanical Impact	None.
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Sensitivity to Static Discharge	None.
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Special protective equipment for	Firefighters should wear self-contained breathing apparatus and full firefighting turnout
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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume

Aluminum 7429-90-5	TWA: 1 mg/m ³ respirable particulate matter	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust(vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F

Chemical name	Alberta	British Columbia	Ontario TWA EV	Quebec
Copper 7440-50-8	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³
Aluminum 7429-90-5	TWA: 10 mg/m ³	TWA: 1.0 mg/m ³	TWA: 1 mg/m ³	TWA: 10 mg/m ³
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d962 (11th Cir., 1992).

Appropriate engineering controls

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

If splashes are likely to occur, wear safety glasses with side-shields.

Hand protection

Wear suitable gloves. Impervious gloves.

Skin and body protection

Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Solid
Appearance	Black
Odor	Odorless
Color	No information available
Odor Threshold	Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks Method</u>
pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known

Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water Solubility	Insoluble in water	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/water ¹		
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	
Kinematic viscosity	No data available	
Dynamic viscosity		
Other Information		
Explosive properties	No information available.	
Oxidizing properties	No information available.	
Softening Point	No information available	
Molecular Weight	No information available	
VOC Content (%)	No information available	
Liquid Density	No information available	
Bulk Density	No information available	
Particle Size	No information available	
Particle Size Distribution	No information available	

10. STABILITY AND REACTIVITY

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous Polymerization	Hazardous polymerization does not occur.
Conditions to avoid	None known based on information supplied.
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.
Hazardous Decomposition Products	Carbonoxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information In case of rupture:
Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). Irritating to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause

gastrointestinal irritation, nausea, vomiting and diarrhea.

Information on toxicological effects

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing

Numerical measures of toxicity

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 12,452.00 mg/kg

ATEmix (dermal) 9,132.00 mg/kg

Unknown acute toxicity 30.9 % of the mixture consists of ingredient(s) of unknown toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Lithium Cobalt Oxide	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 5.05 mg/L (Rat) 4 h
Copper	-	-	> 5.11 mg/L (Rat) 4 h
Aluminum	-	-	> 0.888 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Irritating to skin.

Serious eye damage/eye irritation Classification based on data available for ingredients. Irritating to eyes.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity Classification based on data available for ingredients. Contains a known or suspected carcinogen.

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

NTP (National Toxicology Program)

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Toxicity to Fish	Toxicity to Microorganism	Crustacea
Copper foil	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas)	No data available	48h EC50: = 0.03 mg/L (Daphnia magna)

Persistence and Degradability No information available.

Bioaccumulation No information available

Mobility No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

14. TRANSPORT INFORMATION

Note:	The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule) Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"
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TDG Not regulated

DOT NOT REGULATED
Proper Shipping Name NON-REGULATED
Hazard Class N/A
Emergency Response Guide Number 147

MEX Not regulated

ICAO Not regulated

IATA
UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
ERG Code 12FZ
Description Lithium Battery Mark, Class 9 lithium battery hazard label, Cargo Aircraft Only Label.

IMDG/IMO Not regulated
Hazard Class N/A
EmS-No. F-A, S-I

RID Not regulated

ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Regulations

Ozone-depleting substances (ODS) Not applicable

Persistent Organic Pollutants Not applicable

Export Notification requirements Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

<u>NFPA</u>	Health hazards 1	Flammability 0	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health hazards 0	Flammability 0	Physical hazards 0	Personal Protection X

Prepared By Shenzhen Precise Testing Technology Co., Ltd.

Issuing Date 31-10-2023

Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

Inhalation Statement	dust
Not Hazardous	This is a battery. In case of rupture:
Hazard statements	Causes damage to organs through prolonged or repeated exposure
Signal word	Danger
Precautionary Statements	P302 + P352 - IF ON SKIN: Wash with plenty of water and soap P321 - Specific treatment (see supplemental first aid instructions on this label) P332 + P313 - If skin irritation occurs: Get medical advice/attention P362 + P364 - Take off contaminated clothing and wash it before reuse P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P337 + P313 - If eye irritation persists: Get medical advice/attention P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P280 - Wear protective gloves/protective clothing/eye protection/face protection P308 + P313 - IF exposed or concerned: Get medical advice/attention P405 - Store locked up P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P314 - Get medical advice/attention if you feel unwell P501 - Dispose of contents/ container to an approved waste disposal plant
Signal word	Danger
Skin corrosion/irritation	Category 2

Hazard statements	Causes skin irritation
Signal word	Warning
Serious eye damage/eye irritation	Category 2A
Hazard statements	Causes serious eye irritation
Signal word	Warning
Carcinogenicity	Category 2
Hazard statements	Suspected of causing cancer
Signal word	Warning
Specific target organ toxicity (repeated exposure)	Category 1
Skin corrosion/irritation	- (H315)
Serious eye damage/eye irritation	- (H319)
Carcinogenicity	- (H351)
STOT - repeated exposure	- (H372)
STOT - repeated exposure	
Graphic	
Graphic	
Graphic	
Hazard statements	Causes skin irritation Causes serious eye irritation Suspected of causing cancer Causes damage to organs through prolonged or repeated exposure
Hazard statements	H315 - Causes skin irritation H319 - Causes serious eye irritation H351 - Suspected of causing cancer H351 - Suspected of causing cancer H372 - Causes damage to organs through prolonged or repeated exposure H372 - Causes damage to organs through prolonged or repeated exposure
Precautionary Statements - EU (§28, 1272/2008)	P103 - Read label before use P280 - Wear face protection P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish P234 - Keep only in original container P303 - IF ON SKIN (or hair):
Precautionary Statements	IF ON SKIN: Wash with plenty of water and soap IF ON SKIN: Wash with plenty of water and soap If skin irritation occurs: Get medical advice/attention If skin irritation occurs: Get medical advice/attention Take off contaminated clothing And wash it before reuse Take off contaminated clothing and wash it before reuse Take off contaminated clothing and wash it before reuse IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention If eye irritation persists: Get medical advice/attention Obtain special instructions before use Obtain special instructions before use Do not handle until all safety precautions have been read and understood Do not handle until all safety precautions have been read and understood Wear protective gloves Wear protective gloves IF exposed or concerned: Get medical advice/attention IF exposed or concerned: Get medical advice/attention Store locked up Do not breathe dust/fume/gas/mist/vapors/spray Do not breathe dust/fume/gas/mist/vapors/spray Do not breathe dust/fume/gas/mist/vapors/spray Do not eat, drink or smoke when using this product Do not eat, drink or smoke when using this product Get medical advice/attention if you feel unwell Get medical advice/attention if you feel unwell
Skin	IF ON SKIN: Wash with plenty of water and soap If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before reuse

Precautionary Statements	P302 + P352 - IF ON SKIN: Wash with plenty of water and soap P321 - Specific treatment (see supplemental first aid instructions on this label) P332 + P313 - If skin irritation occurs: Get medical advice/attention P362 + P364 - Take off contaminated clothing and wash it before reuse P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P337 + P313 - If eye irritation persists: Get medical advice/attention P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P280 - Wear protective gloves/protective clothing/eye protection/face protection P308 + P313 - IF exposed or concerned: Get medical advice/attention P405 - Store locked up P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P314 - Get medical advice/attention if you feel unwell P501 - Dispose of contents/ container to an approved waste disposal plant
Precautionary Statements - Prevention	Obtain special instructions before use Do not handle until all safety precautions have been read and understood Wear protective gloves/protective clothing/eye protection/face protection Wash face, hands and any exposed skin thoroughly after handling Do not breathe dust/fume/gas/mist/vapors/spray Do not eat, drink or smoke when using this product
Precautionary Statements - Response	IF exposed or concerned: Get medical advice/attention Specific treatment (see supplemental first aid instructions on this label)
Eyes	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention
Skin	IF ON SKIN: Wash with plenty of water and soap If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before reuse
Precautionary Statements - Storage	Store locked up
Precautionary Statements - Disposal	Dispose of contents/container to an approved waste disposal plant
The following values are calculated based on chapter 3.1 of the GHS document	
ATEmix (oral)	12,452.00
Units	mg/kg
ATEmix (dermal)	9,132.00
Units	mg/kg
Contains Carbon black, Phosphate(1-), hexafluoro-, lithium	
Unknown acute toxicity	90.77 % of the mixture consists of component(s) of unknown hazards to the aquatic environment
Unknown Acute Aquatic Toxicity	90.77
Unknown Chronic Aquatic Toxicity	90.77
Product ATE Oral Status	1
Product ATE Dermal Status	1
Product ATE Inhalation - Gas Status	1
Product ATE Inhalation - Vapor Status	1
Product ATE Inhalation - Dust/Mist Status	1
Product Skin Corrosion Status	1
Product Eye Damage Status	1
Product Respiratory Sens. Status	1
Product Skin Sensitization Status	1
Product Mutagenic Status	1
Product Carcinogenic Status	1
Product Reproductive Toxicity Status	1
Product STOT Single Status	1
Product STOT Repeated Status	1
Product Aquatic Toxicity Status	1
Product Aspiration Toxicity Status	1
Product Ozone Status	1
Product and Component Overall	1
Classification Status	
STOT - repeated exposure	- (H372)
Unknown acute toxicity	30.9 % of the mixture consists of ingredient(s) of unknown toxicity
30.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity	
30.9 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity	
30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)	
30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)	
30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)	
Symbols/Pictograms	
Symbols/Pictograms	
Other hazards	Very toxic to aquatic life with long lasting effects
Health hazards	Skull and Crossbones
Health hazards	Exclamation mark
Inhalation Statement	dust
Health hazards	1