材料安全数据表
Material Safety Data Sheet

委托单位： **Client:**	重庆市维都利新能源有限公司 Chongqing VDL New Energy Co.,Ltd.
样品名称： **Name of Sample:**	可充式锂离子电池组 Rechargeable Li-ion Battery
型号/规格： **Model/Type:**	562827PN5 / 3.87V,620mAh,2.4Wh
编制单位： **Prepared By:**	深圳市赛为检测技术有限公司 Shenzhen Safe Win Testing Technology Co., Ltd. 深圳市宝安区福海街道和平社区永和路45号金丰智汇谷A栋厂房106、401 Room 106, 401, Building A, Jinfeng Zhihuigu, No. 45 Yonghe Road, Heping Community, Fuhai Street, Bao 'an District, Shenzhen City, Guangdong Province, China
报告编号： **Report No.:**	SWT25054505B01D-M0
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1. 化学品及企业标识 Chemical product and company identification	
样品名称 Name of Sample	可充式锂离子电池组 Rechargeable Li-ion Battery
型号/规格 Model/Type	562827PN5 / 3.87V,620mAh,2.4Wh
委托单位 Commissioned by	重庆市维都利新能源有限公司 Chongqing VDL New Energy Co.,Ltd.
委托单位地址 Commissioner address	重庆市万州区联合路20号附1号、附2号、附3号、附4号、附5号、附6号, 6号 No.20-1, No.20-2, No.20-3, No.20-4, No.20-5, No.20-6 and No.6 LIANHE Road, Wanzhou District, Chongqing City
生产工厂 Factory	重庆市维都利新能源有限公司 Chongqing VDL New Energy Co.,Ltd.
生产工厂地址 Factory address	重庆市万州区联合路20号附1号、附2号、附3号、附4号、附5号、附6号, 6号 No.20-1, No.20-2, No.20-3, No.20-4, No.20-5, No.20-6 and No.6 LIANHE Road, Wanzhou District, Chongqing City
应急电话 Emergency telephone call	13423104073
邮箱 E-mail	pur03@gdvdl.com
收样日期 Data of received	2025-05-21
编制日期 Prepared Date	2025-06-05

2. 成分/组成信息 Composition information		
材料及组分 Material or ingredient	CAS号 CAS No.	重量含量 Wt %
Lithium Cobalt Oxide 钴酸锂	12190-79-3	30%~50%
Carbon Black 炭黑	1333-86-4	0.5%~1%
Polyvinylidene Fluoride PVDF	24937-79-9	0.5%~1%
Aluminium 铝	7429-90-5	5%~10%
Graphite 石墨	7782-42-5	15%~25%
Styrene-Butadiene Rubber SBR	9003-55-8	0.2%~1%
Carboxymethyl cellulose CMC	9004-32-4	0.2%~1%
Copper 铜	7440-50-8	5%~15%
Nickel 镍	7440-02-0	0.5%~1.5%
Lithium Hexafluorophosphate 六氟磷酸锂	21324-40-3	15%~25%
Ethylene carbonate 碳酸乙烯酯	96-49-1	
Propylene carbonate 碳酸丙烯酯	108-32-7	
Propionic acid ethyl ester 丙酸乙酯	105-37-3	
Propyl propionate 丙酸丙酯	106-36-5	
1,3-Propanesultone 1，3-丙烷磺酸内酯	1120-71-4	0%~1%
Polyethylene 聚乙烯	9002-88-4	1%~5%
Nylon6 尼龙6	25038-54-4	0.5%~1%
Other 其它	--	0.5%-5%

3. 危险性概述 Hazards identification	
爆炸危险性 Explosive risk	该物品不属于爆炸危险品 This article does not belong to the explosion dangerous goods

易燃危险性 Flammable risk	该物品不属于易燃危险品 This article does not belong to the flammable material
氧化危险性 Oxidation risk	该物品不属于氧化危险品 This article does not belong to the oxidation of dangerous goods
毒害危险性 Toxic risk	该物品不属于毒害危险品 This article does not belong to the toxic dangerous goods
放射危险性 Radioactive risk	该物品不属于放射危险品 This article does not belong to the radiation of dangerous goods
腐蚀危险性 Mordant risk	该物品不属于腐蚀危险品 This article does not belong to the corrosion of dangerous goods
其他危险性 other risk	该锂电池瓦时率为2.4Wh, 属于可充电锂离子电池（包括锂离子聚合物电池） The item is a Li-ion battery with a lithium ion battery watts rate of 2.4Wh and is a rechargeable lithium ion battery (including lithium ion polymer battery)

4. 急救措施
First aid measures

电池外壳破裂，内容物接触人体会产生危害，一旦发生接触，应采取以下应急措施：
Once battery shell rupture, content contact with the human body will produce harm, once contact, should take the following emergency measures:
眼睛: 万一接触，立即用大量的清水冲洗至少15分钟，翻起上下眼睑，直到化学的残留物消失为止，迅速就医。
Eye: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
皮肤: 万一接触，用大量水冲洗至少15分钟，同时除去污染的衣物和鞋子，迅速就医。
Skin: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.
吸入: 立即从暴露处移至空气清新处，如果呼吸困难给予输氧，立即就医。
Inhalation: Remove from exposure and move to fresh air immediately. Use oxygen if available.
食入: 饮用两杯牛奶或水。如果当事人仍然清晰可以采取催吐的方法，并且立即就医。
Ingestion: Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician

5. 消防措施
Fire-fighting measures

燃点: 不适用
Flash Point: N/A.
自燃温度: 不适用
Auto-Ignition Temperature: N/A.
灭火介质: 大量水 (降温), 二氧化碳

Extinguishing Media: Water, CO_2.
特殊灭火程序: 自给式呼吸器
Special Fire-Fighting Procedures
Self-contained breathing apparatus.
异常火灾或爆炸: 当电芯暴露于过热的环境中时, 安全阀可能会打开。
Unusual Fire and Explosion Hazards
Cell may vent when subjected to excessive heat-exposing battery contents.
燃烧产生的危险物品: 一氧化碳, 二氧化碳, 锂氧化物烟气
Hazardous Combustion Products
Carbon monoxide, carbon dioxide, lithium oxide fumes.

6. 泄露应急处理
Accidental release measures

为防止电池材料泄露或释放采取的措施
如果电池内部材料泄露，试验人员应立刻撤离试验区直到烟气消散。将通风设备打开吹散危险性气体。用抹布擦净试验区，清除溢出的液体，将泄露电池放进塑料袋中，然后放进钢制容器。避免皮肤和眼睛接触或吸入有害气体。
Steps to be taken in case Material is Released or Spilled
If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.
废弃物处置方法
用沙子或其他不易燃的吸收材料吸收溢出物，然后放在干燥、清洁和有盖的容器中。避免产生灰尘，保持空气流通。损坏的电池不应加热或灰化，应放在密封的防火或阻燃容器中。
Waste Disposal Method
Absorb spill with sand or other noncombustible absorbent materials, then place in dry, clean and covered container. Avoid the generation of dust and maintain air circulation. The damaged battery should not be heated or incinerated, and should be placed in a sealed fire-resistant or nonflameable container.

7. 操作处置和储存
Handling and storage

禁止打开、毁坏或焚烧电池，因为电池有可能在这些处理过程中发生爆炸、破裂或泄露等事故。禁止将电池短路、过充、强制放电或扔入火中。禁止挤压刺穿电池或将电池浸入溶液中。
The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.
操作处置和储存中的防范措施
禁止物理或电滥用，禁止高温储存，最好将电池储存在阴凉、干燥、通风及温度变化较小的环境中。禁止将电池接触加热设备或将电池直接暴露与阳光中。
Precautions to be taken in handling and storing
Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.
其他要注意的防范措施

拆解、挤压、直接放入火中或高温条件下，电池可能发生爆炸和燃烧。禁止短接或将电池正负极错误的安装在设备中。

Other Precautions

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

8. 接触控制/个人防护
Exposure controls/personal protection

呼吸防护：

当电池排气阀打开时，应尽量使通风设备开至最大，避免将打开排气阀的电芯局限在某一狭窄空间内。正常操作条件下，呼吸保护是不必要的。

Respiratory Protection

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use.

通风条件

正常使用条件下不必考虑。

Ventilation

Not necessary under conditions of normal use.

防护手套

正常使用条件下不必考虑。

Protective Gloves

Not necessary under conditions of normal use.

其他防护服装或设备

正常使用条件下不必考虑。

Other Protective Clothing or Equipment

Not necessary under conditions of normal use.

电池开阀试验时应做好个人防护

呼吸防护，防护手套，防护服装和有护边的安全玻璃罩都是要准备的。

Personal Protection is recommended for venting battery

Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

9. 物理和化学特性
Physical and chemical properties

外形: 棱柱形

Appearance: Prismatic

认证编号: SWT25054505B01A-M0

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气味: 泄漏时，有醚的气味。

Odour: If leaking, smells of medical ether.

酸碱度: 不适用

pH: Not applicable as supplied.

闪点: 针对单个组分暴露情况，其他不适用。

Flash Point: Not applicable unless individual components exposed.

易燃度: 针对单个组分暴露情况，其他不适用。

Flammability: Not applicable unless individual components exposed.

相对密度: 针对单个组分暴露情况，其他不适用。

Relative density: Not applicable unless individual components exposed.

溶解性 (水溶性): 针对单个组分暴露情况，其他不适用。

Solubility (water): Not applicable unless individual components exposed.

溶解性 (其他): 针对单个组分暴露情况，其他不适用。
Solubility (other): Not applicable unless individual components exposed.

10. 稳定性和反应活性
Stability and reactivity

稳定性：产品在第7节所述的条件下稳定。
Stability: Product is stable under conditions described in Section 7.
应避免的条件: 加热70°C以上或焚烧、变形、毁坏、粉碎、拆卸、过充电、短路，长时间暴露在潮湿的条件下。
Conditions to Avoid: Heat above 70°C or incinerate. Deform. Mutilate. Crush. Disassemble. Overcharge. Short circuit. Expose over a long period to humid conditions.
应避免的材料: 氧化剂，碱，水。
Materials to avoid: Oxidising agents, alkalis, water.
危险分解物: 有毒烟雾，并可能形成过氧化物。
Hazardous Decomposition Products: Toxic Fumes, and may form peroxides.
聚合危害：不适用
Hazardous Polymerization : N/A.
如果发生泄露，避免与强氧化剂，无机酸，强碱，卤代烃接触。
If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbon.

11. 毒理学资料
Toxicological information

标志及症状：无，除非电池破裂。
Signs & symptoms: None, unless battery ruptures.
内部物质暴露的情况下，蒸汽烟雾可能对眼睛和皮肤的刺激性。
In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.
吸入：对肺有刺激性。
Inhalation: Lung irritant.
皮肤接触：对皮肤刺激性。
Skin contact: Skin irritant.
眼睛接触：对眼睛有刺激性。
Eye contact: Eye irritant
食入：吞下中毒。
Ingestion: Poisoning if swallowed.
下列情况下会危险人员身体健康：如果与电池内部材料直接接触，皮肤可能会出现干燥、灼烧等轻微或严重的刺激，并且损坏靶器官的神经，肝脏和肾脏。
Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to server irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

12. 生态学资料
Ecological information

对哺乳动物的影响：目前未知。
Mammalian effects: None known at present.
生态毒性：目前未知。

Eco-toxicity: None known at present.
生物体内积累：慢慢地生物降解。
Bioaccumulation potential: Slowly Bio-degradable.
环境危害：目前没有已知的环境危害。
Environmental fate: None known environmental hazards at present.

13. 废弃处置
Disposal consideration

禁止焚烧，或使电池温度超过70°C，这种滥用可导致泄漏和/或电池爆炸。应按照相应的地方性法规处理。
Do not incinerate, or subject cells to temperature in excess of 70°C, Such abuse can result in loss of seal leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations.

14. 运输信息
Transport information

该锂电池货物已通过联合国《试验和标准手册》第38.3节相关的测试要求。
The lithium battery cargo has passed the relevant test requirements of Section 38.3 of the Manual of Tests and Criteria.
该锂电池货物做了防短路保护，包括防止与同一封装内的导电材料接触可能导致的短路。
The lithium battery cargo was protected so as to prevent short circuits, this includes protection against contact with conductive materials within the same packaging that could lead to short circuit.
包装应以避免在运输，处理和堆放期间的机械损坏。
The packaging was adequate to avoid mechanical damage during transport, handling and stacking.
包装必须小心处理，如果包装损坏，存在易燃危险。
The package must be handled with care and that a flammability hazard exists if the package is damaged.
EmS 编号: F-A, S-I
EmS No.: F-A, S-I
海洋污染物：无
Marine pollutant: No
UN 合适的运输名称/描述(技术名称)：1）锂离子电池；2）锂离子电池与设备包装在一起；3）锂离子电池装在设备中;
UN Proper shipping name/Description (technical name): 1) Lithium ion batteries; 2) Lithium ion batteries packed with equipment; 3) Lithium ion batteries contained in equipment;
锂电池的 UN 编号：UN3480 或 UN3481;
UN number of lithium battery: UN3480 or UN3481;
PG 包装等级: 不适用
PG Packing Group: Not applicable

空运：
Air Transport:
运输标签：锂电池标记，第9类锂电池或钠离子电池危险品标签，仅限货机标签。
Label for conveyance: Lithium Battery Mark, Class 9 Lithium Batteries or Sodium Ion Batteries hazard label, Cargo Aircraft Only Label.
危险类别：货物符合国际航空运输协会第66版《危险品规则》（2025年版）包装说明965 第IB节的要求，或国际航空运输协会第66版《危险品规则》（2025年版）包装说明966~967 第II节的要求。

Hazard Classification: The goods are complied with the requirements of Section IB of Packing Instruction 965 of 66th DGR Manual of IATA (2025 Edition), or Section II of Packing Instruction 966～967 of 66th DGR Manual of IATA (2025 Edition).

海运:
Maritime transport:
运输标签：锂电池标记。
Label for conveyance: Lithium Battery Mark.
该货物不受国际海事组织《国际海运危险货物规则》（Amdt. 42-24版）特殊规定188的限制，可按非危险货物运输。
The goods are not restricted to the requirements Special provision 188 of IMDG CODE (Amdt. 42-24) and can be shipped as non-ngerous goods.

15. 法规信息
Regulation information

法律信息
Law information
《危险物品规则》
《Dangerous Goods Regulations》
《对危险货物运输的有关规定的建议》
《Recommendations on the Transport of Dangerous Goods Model Regulations》
《国际海运危险货物规则》
《International Maritime Dangerous Goods》
《危险货物品名表》
《List of dangerous goods》
《欧洲道路危险货物国际运输协议》
《European Agreement concerning the International Carriage of Dangerous Goods by Road》
《危险品安全运输技术指令》
《Technical Instructions for the Safe Transport of Dangerous Goods》
《危险货物分类和品名编号》
《Classification and code of dangerous goods》
《职业安全卫生法》
《Occupational Safety and Health Act》(OSHA)
《有毒物质控制法》
《Toxic Substance Control Act》(TSCA)
《消费产品安全法》
《Consumer Product Safety Act》(CPSA)
《联邦环境污染控制法》
《Federal Environmental Pollution Control Act》(FEPCA)
《石油污染法案》
《The Oil Pollution Act》(OPA)
《超级基金修正案和再授权法案Ⅲ(302/311/312/313)》
《Superfund Amendments and Reauthorization Act TitleⅢ (302/311/312/313)》(SARA)
《资源保护及恢复法案》
《Resource Conservation and Recovery Act》(RCRA)
《安全饮用水法》
《Safety Drinking Water Act》(CWA)

《加州65提案》
《California Proposition 65》
《美国联邦法规》
《Code of Federal Regulations》(CFR)
根据所有联邦、州和地方法律。
In accordance with all Federal, State and local laws.

16. 其他信息
Other information

本文件仅对由委托方（重庆市维都利新能源有限公司）提供的，并由（重庆市维都利新能源有限公司）生产的可充式锂离子电池组（562827PN5）有效。该电池的成分信息由委托方提供并承诺其完整性和准确性。用户应仔细阅读此文件，并按照正确的方法使用电池，如因电池使用不当造成的损害或损失，深圳市赛为检测技术有限公司不承担任何责任。

This file is only effective to the Rechargeable Li-ion Battery (562827PN5) provided by commissioner (Chongqing VDL New Energy Co.,Ltd.), which manufactured by (Chongqing VDL New Energy Co.,Ltd.). The commissioner provides the composition information of batteries, and promises its integrity and accuracy. Users should read this file carefully, and use the batteries in correct method. Shenzhen Safe Win Testing Technology Co., Ltd doesn't assume responsibility for any damage or loss because of misuse of batteries.

注 意 事 项
Important

1. 本报告无检测单位印章无效。
   The test report is invalid without the official stamp of SWT.
2. 未经本试验室书面同意，不得部分地复制本报告。
   Nobody is allowed to photocopy or partly photocopy this test report without written permission of SWT.
3. 本报告无批准人、审核人及鉴定人签名无效。
   The test report is invalid without the signatures of Ratifier, Reviewer and Testing engineer.
4. 本报告涂改无效。
   The test report is invalid if altered.
5. 对检测报告若有异议，应于收到报告之日起十五天内向检测单位提出。
   Objections to the test report must be submitted to SWT within 15 days.
6. 本报告仅对送检样品负责。
   The test report is valid for the tested samples only.
7. 本报告仅供委托方内部质量控制使用，不对社会公开出具。
   This report is only used for internal quality controlling of the client.

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****** 报告结束 ******
****** **End of Report** ******