





中国认可 国际互认 检验 INSPECTION CNAS IB0551

Report No.:

报告编号: PRSS20230105MSDS02

MATERIAL SAFETY DATA SHEET

材料安全数据表

Product Rechargeable Li-ion Polymer Battery 产品 锂离子电池组/二次鋰電池組 Type/Model **BW56** 型号 **Issue Date** 2023-01-10 签发日期 **Validity** $2023-01-10 \sim 2023-12-31$ 有效期 Compiler Jinxing Liao 编写 Reviewer **HUANG** 审核 **Approver** 批准

广州邦禾检测技术有限公司

Guangzhou MCM Certification & Testing Co., Ltd.



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Material Safety Data Sheet

材料安全数据表

SECTION 1 - CHEMICAL AND COMPANY IDENTIFICATION		
第1节—化学品和公司标识		
Product	Rechargeable Li-ion Polymer Battery	
产品	锂离子电池组/二次鋰電池組	
Type/Model: 型号	BW56	
Parameter 参数	3.87V, 495mAh, 1.915Wh	
	☑ Used in Portable Equipment 用于便携式设备	
Usage	☐ Used in Electric Vehicle 用于电动车辆	
用途	☐ Used in Energy Storage System 用于储能系统	
	☐ Others 其他	
Company	Dongguan Liwinon Energy Technology Co., Ltd.	
公司	东莞锂威能源科技有限公司	
Address	No.1, Tangxia Industrial Park, Gaobu, Dongguan, Guangdong, PRC 523281	
地址	广东省东莞市高埗镇塘厦村工业区 1 号厂房	
Fax 传真		
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E-mail 电子邮箱	XiaoK@liwinon.com	
Emergency Telephone 紧急联系电话		
15292296377		

SECTION 2 - HAZARDS IDENTIFICATION

第2节一危害识别

Classification 分类:

This chemical is not considered hazardous by the Regulation (EC) No 1272/2008 (CLP). This product is an article which is a sealed battery and as such does not require an SDS per the Regulation (EC) No 1272/2008 (CLP) unless ruptured. The hazards indicated are for a ruptured battery.

该化学品不被法规(EC)No.1272/2008(CLP)认为是危险的。本产品为密封电池,因此,除非破裂,不需要SDS (EC) No.1272/2008 (CLP)。以下提到的危险是电池破裂造成的。

Acute toxicity – Oral	Category 4
急性毒性-口服	第4类
Acute toxicity - Dermal	Category 4
急性毒性-皮肤	第4类
Skin corrosion/irritation	Category 1B
皮肤腐蚀/刺激	第1 B 类
Serious eye damage/eye irritation	Category 2
严重眼睛损失/眼睛刺激	第2类
Skin sensitization	Category 1
皮肤致敏	第1类
Carcinogenicity	Category 2
致癌性	第2类
Specific target organ toxicity (repeated exposure)	Category 1
特异性靶器官毒性(重复暴露)	第1类

GB/T 16483: 2008 01 Page 2 of 11 Pages



Label elements 标签要素:

Signal Word信号词:

Danger 危险

Hazard Statements 风险声明

nazaru Statements 八個戶明	
H302	Harmful if swallowed.
	吞食有害
H312	Harmful in contact with skin.
	与皮肤接触有害
H332	Harmful if inhaled.
ПЗЗД	吸入有害
H318	Causes serious eye damage.
	对眼睛造成严重损害
LI247	May cause an allergic skin reaction.
H317	可能导致皮肤过敏反应
H350	May cause cancer.
	可能致癌
H371	May cause damage to organs.
	可能对器官造成损害
H355	May cause respiratory irritation.
	可能引起呼吸道刺激
H371	可能致癌 May cause damage to organs. 可能对器官造成损害 May cause respiratory irritation.

Symbol标志



This product is an article which contains a chemical substance. Safety information is given for exposure to the article as solid. Intended use of the product should not result in exposure to the chemical substance, This is a battery. In case of rupture: the above hazards exist.

这个产品是一种含有化学物质的物品。安全信息是为了固体物质的暴露而提供。这是一个电池,本产品的预期用途不应导致化学物质暴露。万一破裂,上述危害存在。

GB/T 16483: 2008 01 Page 3 of 11 Pages



Precautionary Statements - Prevention

预防说明-预防

P201	Obtain special instructions before use. 在使用前获得特殊说明
P202	Do not handle until all safety precautions have been read and understood. 阅读和理解安全注意事项后再操作
P281	Use personal protective equipment as required. 按要求使用个人防护装备
P264	Wash face, hands and any exposed skin thoroughly after handling. 处理后彻底清洗脸、手和任何暴露的皮肤
P272	Contaminated work clothing should not be allowed out of the workplace. 不应让受污染的工作服离开工作场
P210	Keep away from heat/sparks/open flames/hot surfaces –no smoking. 远离热源/火花/明火/热表面——禁止吸烟
P270	Do not eat, drink or smoke when using this product. 使用本品时请勿吃、喝、吸烟

Precautionary Statements - Response

预防声明--响应

P301+ P330+ P308

If exposed or connected: Get medical advice/attention. Specific treatment(see supplemental first aid/instruction on this label).

如果暴露或接触: 求医/就医。特殊治疗 (见标签上的补充急救/说明)

Skin: If on skin: wash with plenty of soap and water. Take off contaminated clothing and water before reuse, if skin irritation or rash occurs: get medical advice/attention if feel unwell.

皮肤:如果皮肤:用大量的肥皂和水清洗。如果出现皮肤刺激或皮疹,在重复使用前脱下受污染的衣服和水:如果感觉不适,请就医/就诊。

Eye: If in eyes: Rinse cautiously with water for several minutes, remove contact lenses, if present and easy to do, Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell.

眼睛:如果进入眼睛:小心用水冲洗几分钟,取下隐形眼镜,如果存在且容易做到,继续冲洗;如果你感觉不舒服, 打电话给中毒中心或医生/医生

Inhalation: If inhalation: if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician if you feel unwell.

吸入:如果吸入,如果呼吸困难,将患者转移到空气新鲜的地方,保持一个适合呼吸的姿势休息;如果出现呼吸道症状,如果感觉不适,呼叫解毒中心或医生/内科医生。

Ingestion: If swallowed: rinse mouth, do not induce vomiting, Call a POISON CENTER or doctor/physician if you feel unwell.

食入:如吞下:漱口,不要催吐。如果感觉不适,呼叫解毒中心或医生/内科医生。

Precautionary Statements - Storage

预防声明—存储

D405	Store locked up
P405	加锁存储

Precautionary Statements - Disposal

预防声明—处置

P501 Dispose of contents/container to an approved waste disposal plant.	
F 30 1	内容物/容器处理到经批准的废物处理工厂

Hazards not otherwise classified (HNOC) 未分类的危险

Not applicable 不适用

GB/T 16483: 2008 01 Page 4 of 11 Pages



Other information 其他信息

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

对水生生物有害,可能对水生环境造成长期不利影响。

Interactions with other chemicals与其他化学物质的相互作用

Use of alcoholic beverages may enhance toxic effect.

使用酒精饮料可能会增强毒性作用

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENT 第3节一成分信息			
Ingredient 成分	Molecular formula 分子式	CAS No. CAS 号	Weigh 含量
Aluminium /铝	Al	7429-90-5	4.7%
Lithium Cobalt Dioxide /钴酸锂	LiCoO ₂	12190-79-3	42.2%
Polyvinylidene Fluoride /聚偏二氟乙烯	(C ₂ H ₂ F ₂) _n	24937-79-9	0.55%
Styrene Butadiene Rubber /聚苯乙烯丁二烯共聚物	C ₃₆ H ₄₂ X ₂	9003-55-8	0.34%
Copper /铜	Cu	7440-50-8	9.7%
Graphite /石墨	C ₂₄ X ₁₂	7782-42-5	24.2%
Lithium Hexafluorophosphate /六氟磷酸锂	LiPF ₆	21324-40-3	1.61%
1,3-Propanesultone /1,3-丙烷磺内酯	C ₃ H ₆ O ₃ S	1120-71-4	0.5%
Other /其他	-	-	16.2%
Lead /铅	Pb	7439-92-1	Not Detected
Cadmium /镉	Cd	7440-43-9	Not Detected
Mercury /汞	Hgnoody	7439-97-6	Not Detected

SECTION 4 - FIRST AID MEASURES

第4节一急救措施

Eye Exposure 眼睛接触:

In case of contact with eyes, flush with copious of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

如果与眼睛接触,用大量的水冲洗至少15分钟。用手指分开眼睑,确保充分的冲洗。寻求医生。

Skin Exposure 皮肤接触:

If the internal battery materials of an opened battery cell come into contact with skin, immediately flush with plenty of water or soap.

如果打开的电池的内部电池材料接触到皮肤, 立即用大量的水或肥皂冲洗。

Inhalation Exposure 吸入:

If inhaled the internals of battery vomiting. Seeking Immediate medical attention.

如果吸入电池内部呕吐。立即就医。

Ingestion Exposure 吞咽:

If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel. 如果吞咽,请就医。除非医务人员指示,否则不要催吐。

GB/T 16483: 2008 01 Page 5 of 11 Pages



SECTION 5 - FIRE FIGHTING MEASURES

第5节一消防措施

Danger characteristic 危险特性:

Exposure to excessive heat can cause venting of the liquid electrolyte.

暴露在过热的环境中会导致液体电解质的释放。

Battery may burst and release hazardous decomposition products when exposed to a fire situation.

当暴露在火灾环境中时, 电池可能会爆裂并释放出危险的分解产物。

Hazardous combustion products 有害危险产物:

Corrosive and toxic gas may be emitted during fire.

着火期间可能会排放腐蚀性和有毒气体。

Fire-Fighting method 灭火措施:

The staff must equip with filtermask (full mask) or isolated breathing apparatus.

员工必须配备过滤器面罩或隔离式呼吸器。

The staff must wear the clothes which can defense the fire in the upwind direction.

工作人员必须穿能在逆风方向防火的衣服。

Remove the container to the open space as soon as possible.

尽快将容器移到空地上。

Spray water on the containers in the fireplace to keep them cool until finish extinguishment.

把水喷在壁炉里的容器上, 使其降温, 直到熄灭。

Fire-Fighting media 灭火介质:

Plenty of water, dry chemical powder or carbon dioxide.

大量的水,干粉或二氧化碳。

SECTION 6 - ACCIDENTAL RELEASE MEASURES

第6节一意外泄漏措施

Emergency treatment 紧急处理:

If the battery material is released, remove personnel from area until the batteries cool down and fumes dissipate. 如果电池材料被释放,请将人员从该区域撤离,直到电池冷却和烟雾消散。

Provide maximum ventilation to clear out hazardous gases and avoid skin and eye contact or inhalation of vapors. 提供最大的通风以清除有害气体和避免皮肤和眼睛接触或吸入蒸汽。

Remove spilled liquid with absorbent and incinerate waste.

用吸收剂除去溢出的液体并焚烧废物。

SECTION 7 - HANDLING AND STORAGE

第7节一处理和储存

Handling 处理:

1. Do not allow battery terminates to contact each other, or contact with other metals.

不要让电池端子相互接触或与其他金属接触。

2. Do not put the cell or battery into a fire or heat it. Do not solder the cell directly. Do not use or leave the cell or battery in a place near fire or heaters.

不要将电芯或电池放入火中或加热。不要直接焊接电池。不要将电芯或电池放在靠近火源或加热器等地方。

3. Do not expose the battery to excessive physical shock or vibration.

不要让电池受到过度的物理冲击或振动。

4. Do not immerse, throw, and wet a battery in water.

不要将电池浸入水中、投掷或弄湿。

5. Short-circuiting should be avoided. Short circuit will reduce the life of the battery and can lead to ignition of surrounding materials. Physical contact with to short- circuited battery can cause skin burn.

应避免短路。短路会降低蓄电池的寿命,并可能导致周围材料着火。与短路电池的物理接触会导致皮肤灼伤。

6. The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to

GB/T 16483: 2008 01 Page 6 of 11 Pages



the environment the ingredients that they contain in the hermetically sealed container.

不应打开、销毁或焚烧电池,因为电池可能泄漏或破裂,并将密封容器中的成分释放到环境中。

7. Place the cell beyond the child packing and container.

将电池放置在儿童触及不到的地方。

8. Do not connect the battery directly to an electric outlet or cigarette socket in a car.

不要将电池直接连接到汽车的电源插座或香烟插座上。

- 9. Be sure to use the specified charger for battery, and follow the charging instructions correctly. 请务必使用指定的蓄电池充电器,并正确遵循充电说明。
- 10. Do not mix old and new batteries together, neither with Ni-Cd, dry batteries or another manufacturer batteries or product.

不要将新旧电池混合在一起使用,也不要与镍镉电池、干电池或其他制造商的电池或产品混合使用。

Storage 储存:

- 1. Batteries should be separated from other materials and stored in a noncombustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks. 电池应与其他材料分开,并存放在不燃、通风良好、有洒水装置保护的结构中,墙壁和电池堆之间应有足够的间隙。
- 2. Keep the sample in the cool, dry and well-ventilated place (temperature: -20~30 °C, humidity: 45~85%). Do not exposure to direct sunlight for long periods. Keep away from fire and heating sources. Don't keep the samples with oxidizer and acid.
 - 将样品置于阴凉、干燥、通风良好的地方(温度-20~30℃,湿度: 45~85%)。不要长时间暴露在阳光直射下。 远离火源和热源。不要用氧化剂和酸保存样品。
- 3. Equip with relevant types and quantities of the extinguishment instruments. The storage place should be equipped with suitable shelter materials for divulgence handling.

 配备相应种类和数量的灭火器材。储存场所应配备适当的掩蔽材料,以便进行泄漏处理。
- 4. For rechargeable battery, charge the battery every 6 months to the amount specified by the manufacture, even if the battery is not used.

对于可充电电池,即使不使用电池,也应每6个月将电池充电至制造商规定的电量。

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

第8节一暴露控制与个人防护措施

Engineering Control 工程控制:

Keep away from heat and open flame. Supply with sufficient partial air exhaust. Store in a cool, dry place. 远离热源和明火。提供足够的局部排气。存放在阴凉干燥的地方。

Respiratory Protection 呼吸保护:

Not necessary under conditions of normal use. Wear self-contained breathing filtermask if the density exceed in the air. Wear breathing apparatus under the condition of emergency rescue or evacuation.

在正常使用条件下不需要。如果环境内气体密度超过空气中的密度,请佩戴自给式呼吸过滤器。在紧急救援或疏散的情况下,佩戴呼吸器。

Eves Protection 眼睛保护:

Not necessary under conditions of normal use. Wear protective glasses if handling a leaking or ruptured battery. 在正常使用条件下不需要。如果处理泄漏或破裂的电池,请戴上防护眼镜。

Skin and Body Protection 皮肤和身体保护:

Not necessary under conditions of normal use. Wear fireproofing, gas defense clothes in case of handling a leaking or ruptured battery.

在正常使用条件下不需要。在处理泄漏或破裂的电池时,穿上防火防毒服。

Hands Protection 手部保护:

Not necessary under conditions of normal use. Wear chemical resistant rubber glove.

在正常使用条件下不需要。耐磨耐化学腐蚀橡胶手套。

GB/T 16483: 2008 01 Page 7 of 11 Pages



Other Protections 其他保护:

No smoking, dining and drinking water in the workplace. Keep good habit of hygiene.

工作场所禁止吸烟、就餐和饮水。保持良好的卫生习惯。

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES 第9节—理化性质	
Appearance 外观:	Black 黑色
Physical state 状态:	Solid 固体
Form 形状:	Prismatic 棱柱形
Odor 气味:	Odorless 无味
Solubility 溶解度:	Insoluble in water 不溶于水

SECTION 10 - STABILITY AND REACTIVITY

第10节一稳定性与反应性

Stability 稳定性:

Stable under normal temperature and pressure.

常温常压下稳定。

Distribution of Ban 禁配物:

Explosives, inflammables, strong oxidants and corrosives.

爆炸品、易燃物、强氧化剂和腐蚀剂。

Conditions to Avoid 应避免的条件:

Fire source, heating source, disassemble, external short circuit, crushes, deformation, high temperature above 100°C, direct sunlight and high humidity, immerse in water or overcharge.

火源、热源、拆卸、外部短路、压碎、变形、100°C 以上高温、阳光直射、高湿度、<mark>浸水</mark>或过充。

Hazardous Polymerization 危险聚合:

Will not occur.

不会发生。

Hazardous Decomposition Products 有害分解产物:

Metal oxides, carboxyl compound such as CO, CO₂, etc.

金属氧化物,碳化合物例如一氧化碳、二氧化碳,等等。

SECTION 11 - TOXICOLOGICAL INFORMATION

第11节一毒理学信息

Acute Toxicity 急性毒性:

No information is available.

没有可用的信息。

Sub-acute and Chronic Toxicity 亚急性和慢性毒性:

No information is available.

没有可用的信息。

Irritation Data 刺激性数据:

The internal battery materials may cause irritation to eyes and skin.

电池内部材料可能会对眼睛和皮肤造成刺激。

Sensitization 致敏作用:

The liquid in the battery may cause sensitization to some person.

电池中的液体可能会对某些人造成敏化。

GB/T 16483: 2008 01 Page 8 of 11 Pages



Mutagenicity 致突变性:

No information is available.

没有可用的信息。

Carcinogenicity 致癌性:

Cobalt and Cobalt compounds are considered to be possible human carcinogen(s).

钴及其钴的化合物有致癌的风险。

Others 其他:

Since the materials in this battery are sealed in the can, the potential for exposure to the components of the battery is negligible, when the battery is used as directed. However technical or electrical abuse of the battery may result in the release of battery contents.

由于该电池中的材料密封在罐体中,当按照指示使用电池时,接触电池组件的可能性可以忽略不计。但是,电池的技术或电气滥用可能会导致蓄电池内容物的释放。

SECTION 12 - ECOLOGICAL INFORMATION

第12节一生态信息

Eco-toxicity 生态毒性:

No information is available.

没有可用的信息。

Biodegradable 生物降解性:

No information is available.

没有可用的信息。

Mobility in soil 土壤流动性:

No information is available.

没有可用的信息。

Bioconcentration or biological accumulation 生物浓缩或生物积累:

No information is available.

没有可用的信息。

Other harmful effects 其他有害影响:

Don't abandon the battery into environment, may cause water or soil pollution.

不要将电池扔进环境中,可能造成水或土壤污染。

SECTION 13 - DISPOSAL CONSIDERATIONS

第13节一处置注意事项

Appropriate Method of Substance 物质处理方法:

The battery should be completely discharged prior to disposal in order to prevent short circuit.

为了防止短路,在处理前应将蓄电池完全放电。

The battery contains recyclable materials, and it is suggested recycle.

电池含有可回收材料,建议回收利用。

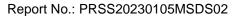
Refer to National or Local regulations before handling.

操作前请参阅国家或地方法规。

Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in National or Local regulations of hazardous waste treatment and hazardous waste transportation.

电池的处理应由获得国家或地方法规的许可的具有危险废物处理和危险废物运输的专业处理公司进行。

GB/T 16483: 2008 01 Page 9 of 11 Pages





SECTION 14 - TRANSPORT INFORMATION

第14节一运输信息

General packaging requirement 一般包装要求:

- The cells or batteries must be protected so as to prevent short circuits.
- · 电芯或电池必须加以保护,以防止短路。
- The cells or batteries or equipment must be packed in suitable strong outer packaging.
- 电芯或电池或设备必须包装在合适的坚固的外包装中。
 - If batteries contained in equipment, equipment must be secured against movement within the outer
- 3. packaging and be packed so as to prevent accidental activation.
 - 如果电池包含在设备中,设备必须在外包装内固定,防止移动,并进行包装,以防止意外激活。

Air transportation, according to IATA-DGR 64th Edition (Effective 1 January-31December 2023) 空运、依据IATA-DGR第64版(2023年1月1日至12月31日生效)

主色,依据IAIA-DGR第04版(2023年1月1日主12月31日主效)		
UN 3480, LITHIUM ION BATTERIES		
UN 3480, 锂离子电池		
Class 9		
第九类危险品		
Strong package, packaging according to PACKING INSTRUCTION 965, section IB		
坚固包装,按照包装说明965 IB部分要求打包		
UN 3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, or		
UN 3481, LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT		
UN 3481, 锂离子电池与设备一起包装,或 UN 3481, 锂离子电池安装在设备中		
Not restricted		
不受限制		
Strong package, packaging according to PACKING INSTRUCTION 966-967, section II		
坚固包装,按照包装说明966-967Ⅱ部分要求打包		

Sea transportation, according to IMO IMDG Code (Amend 40-2020)

海运,依据IMO IMDG Code (Amend 40-2020)

1111	
UN Number + PSN UN编号+运输专用名	UN 3480, LITHIUM ION BATTERIES, or UN 3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, or UN 3481, LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT UN 3480, 锂离子电池 或 UN 3481, 锂离子电池与设备一起包装 或 UN 3481, 锂离子电池安装在设备中
Hazard Class 危险等级	Not restricted, according to sp188 不受限制,根据特殊条款188
Package instruction 包装说明	Strong package, Packaging in accordance to corresponding requirements of sp188 坚固包装,按照sp188相应要求进行包装
EmS No. 应急措施编号	F-A, S-I

Road transportation, according to ADR-2021

公路运输,依据ADR-2021

ATHORN INAL ELECTION		
UN Number + PSN UN编号+运输专用名	UN 3480, LITHIUM ION BATTERIES, or	
	UN 3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, or	
	UN 3481, LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT	
	UN 3480, 锂离子电池 或	
	UN 3481, 锂离子电池与设备一起包装 或 UN 3481, 锂离子电池安装在设备中	
Hazard Class	Not restricted, according to sp188	
危险等级	不受限制,根据特殊条款188	
Package instruction	Strong package, Packaging in accordance to corresponding requirements of sp188	
包装说明	坚固包装,按照sp188相应要求进行包装	

GB/T 16483: 2008 01 Page 10 of 11 Pages

Report No.: PRSS20230105MSDS02



SECTION 15 - REGULATORY INFORMATION

第15节一监管信息

Dangerous Goods Regulation (DGR)

Recommendations on the Transport of Dangerous Goods Model Regulations

International Maritime Dangerous Goods (IMDG)

Occupational Safety and Health Act (OSHA)

Toxic Substances Control Act (TSCA)

Code of Federal Regulations (CFR)

Technical Instructions for the Safe Transport of Dangerous Goods

California Proposition 65

Superfund Amendments and Reauthorization Act Title III (302/311/312/313) (SARA)

Globally Harmonized System of Classification and Labeling of Chemicals(GHS)

In accordance with all Federal, State and local laws. 符合所有联邦、州和地方法律。

SECTION 16 - ADDITIONAL INFORMATION

第16节一附加信息

According standard 标准依据:

GB/T 16483-2008 Safety data sheet for chemical products Content and order of sections ISO 11014:2009(E) Safety data sheet for chemical products - Content and order of sections

Editing date 编辑日期:

2023-01-10

Department 编写机构:

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GB/T 16483: 2008 01 Page 11 of 11 Pages