

# 材料安全数据表

Material Safety Data Sheet

样品名称: 可充式锂离子电池组

Name of Sample: Rechargeable Li-ion Battery Pack

委托单位: 益阳科力远电池有限责任公司

Commissioner: YiYang Corun Battery Co., Ltd.

上海储融检测技术股份有限公司

Shanghai Truron Testing Technology Co., Ltd.



材料安全数据表

Material Safety Data Sheet

Section 1. 产品名称及企业标识

CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

样品名称 Name of goods	可充式锂离子电池组 Rechargeable Li-ion Battery Pack
样品型号 Type/Mode	T2345-BD5A
额定电压 Nominal Parameter:	46.8V
额定容量 Nominal Capacity:	12.75Ah 596.7Wh
生产单位 Manufacturer	益阳科力远电池有限责任公司 YiYang Corun Battery Co., Ltd.
生产单位地址 Manufacturer address	湖南省益阳市高新区高新路 168 号 168# Gaoxin Road, Gaoxin District, Yiyang City, Hunan Province, China
鉴定依据 Inspection according to	EEC Directive 93/112/EC 联合国《关于危险品货物运输的建议书》 UN "Recommendations on the TRANSPORT OF DANGEROUS GOODS"
应急电话 Emergency telephone call	0737-6202906
备注 Comment	/
-	接样日期: 2024-08-09 Received date: 2024-08-09 签发日期: 2024-08-09 Issue date: 2024-08-09

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## Section 2. 危险识别

### HAZARD IDENTIFICATION

#### 2.1 物质或混合物的分类

##### Classification of the substance or mixture

根据法规 (EC) 第 1272/2008 号及其调整

与水接触会释放易燃气体的物质, 类别 2 (水反应 2, H261)

经皮途径急性毒性, 类别 4 (急性毒性 4, H312)

皮肤腐蚀, 类别 1B (皮肤腐蚀 1B, H314)

皮肤敏感化, 类别 1 (皮肤敏感 1, H317)

与水接触剧烈反应 (EUH014)

这种混合物对环境没有危险。在正常使用条件下, 已知或可预见的对环境的影响均不存在。

In accordance with Regulation (EC) No 1272/2008 and its adaptations

Substance which, in contact with water, emits flammable gases, Category 2 (Water-react 2, H261)

Acute toxicity by dermal route, Category 4 (Acute Tox. 4, H312)

Skin corrosion, Category 1B (Skin Cor. 1B, H314)

Skin sensitization, Category 1 (Skin Sens. 1, H317)

Reacts violently with water (EUH014) This mixture does not present any danger to the environment.

No known or foreseeable environmental damage under normal conditions of use.

#### 2.2 标签元素 Label elements

根据法规 (EC) 第 1272/2008 号及其调整。

In accordance with Regulation (EC) No 1272/2008 and its adaptations.

危险象形图

Hazard pictograms:



GHS07

警告说明 Warning mention:

危险 DANGER

产品标识符 Product Identifier



GHS05



GHS02

可充电锂离子电池组

Rechargeable Li-ion Battery Pack

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EC 235-362-0 钴锂氧化物 COBALT LITHIUM DIOXIDE  
EC 202-510-0 碳酸乙烯酯 ETHYLENE CARBONATE  
EC 44-334-7 六 氟 磷 酸 锂 (1-) LITHIUM  
HEXAFLUOROPHOSPHATE(1-)

## 危险说明及附加危险信息

## Hazard statements and additional hazard information:

H261 与水接触释放易燃气体。Releases flammable gases on contact with water.  
H312 皮肤接触有害。Harmful in contact with skin.  
H314 引起严重的皮肤灼伤和眼损伤。Causes severe skin burns and eye damage.  
H317 可能引起皮肤过敏反应。May cause an allergic skin reaction.  
EUH014 与水剧烈反应。Reacts violently with water.

## 一般预防说明:

## Precautionary statements - General:

P101 如需就医, 请随身携带容器或标签。In case of consultation with a doctor, keep the container or label available.  
P102 请放在儿童接触不到的地方。Keep out of reach of children.  
P103 使用前请阅读标签。Read the label before use.

## 预防措施:

## Precautionary measures - Prevention:

P223 避免与水接触, 因为可能会发生剧烈反应和自发性燃烧。Avoid all contact with water due to the risk of violent reaction and spontaneous inflammation.  
P260 不要吸入蒸汽。Do not breathe vapors.  
P264 操作后要彻底洗手。Wash hands thoroughly after handling.  
P273 避免向环境中释放。Avoid release into the environment.  
P280 使用保护手套、服装、眼睛或面部防护设备。Wear protective gloves, clothing, eye protection, or face protection.

## 安全建议 - 干预:

## Safety advice - Intervention:

P301 + P330 + P331 在吞食时: 漱口。不要催吐。  
In case of ingestion: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 皮肤(或头发)接触时: 立即脱掉被污染的衣物。用水冲洗皮肤/淋浴。  
In case of skin (or hair) contact: Immediately remove contaminated clothing. Rinse skin with water/shower.  
P304 + P340 吸入时: 将受害者移到室外并让其保持静止的舒适呼吸姿势。In case of

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- inhalation: Move the victim outdoors and keep them in a comfortable breathing position.
- P305 + P351 + P338 眼睛接触时：小心用水冲洗数分钟。如果受害者戴有隐形眼镜且易于摘除，则摘除。继续冲洗。In case of eye contact: Carefully rinse with water for several minutes. Remove contact lenses if the victim wears them and they can be easily removed. Continue rinsing.
- P312 如果出现不适，拨打毒物控制中心或医生电话。Call a POISON CENTER or doctor if the person feels unwell.
- P333 + P313 如果出现皮肤刺激或皮疹：请就医。In case of skin irritation or rash: Consult a doctor.
- P335 + P334 请小心地清除皮肤上的沉积颗粒。用清水冲洗或敷上湿敷物 Carefully remove the particles deposited on the skin. Rinse with fresh water or apply a damp compress.
- P363 洗净受污染的衣服再穿。Wash contaminated clothing before reuse.
- P370 + P378 在火灾发生时：使用沙子或干化学粉末进行灭火。In case of fire: use sand or dry chemical powder for extinguishing.

**储存建议：****Safety advice - Storage:**

- P402 + P404 存放在干燥的地方。存放在密封的容器中。Store in a closed container.

**安全注意事项 - 处置：****Precautionary advice - Disposal:**

- P501 将内容/容器处理于符合当地法规的废物处理中心。Dispose of the contents/container at a waste disposal facility in accordance with local regulations.

**2.3. 其他危险 Other dangers**

该混合物不含欧洲化学品管理局（ECHA）根据 REACH 条例第 57 条发布的浓度 $\geq 0.1\%$ 的“极端关注物质”（SVHC）：<http://echa.europa.eu/fr/candidate-list-table>

The mixture does not contain 'Substances of Very High Concern' (SVHC)  $\geq 0.1\%$  as published by the European Chemicals Agency (ECHA) under Article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

根据 REACH 条例（CE）第 1907/2006 号附件 XIII，该混合物不符合 PBT 或 vPvB 混合物的适用标准。

The mixture does not meet the criteria for PBT or vPvB substances, in accordance with Annex XIII of Regulation (EC) No 1907/2006 (REACH).

电池是包含混合物（电解质）的物品（REACH 的定义）。

THE BATTERY IS AN ARTICLE CONTAINING A MIXTURE (the electrolyte) INCORPORATING (REACH definition).

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电解质在使用过程中被消耗，并且不会被释放（除非物品破损）。

THE ELECTROLYTE IS CONSUMED DURING THE USE PHASE OF THE ARTICLE AND IS NOT RELEASED (except in case of article rupture).

因此，上述标签仅在物品破损时提供信息，不应贴在物品上。

THE LABELING ABOVE IS THEREFORE FOR INFORMATIONAL PURPOSES IN CASE OF ARTICLE RUPTURE AND SHOULD NOT BE APPLIED TO THE ARTICLE.

本安全数据表中描述的可充电锂离子电池是密封产品，在按照制造商建议使用时不具危险性。

The rechargeable lithium-ion batteries described in this SDS are sealed products that are not hazardous when used according to the manufacturer's recommendations.

请勿短路、刺穿、焚烧、压碎、浸泡、强行放电或使其暴露于超出声明的工作温度范围之外的温度。存在起火或爆炸风险。

Do not short-circuit, puncture, incinerate, crush, immerse, force discharge, or expose to temperatures outside the declared operating temperature range for the products. Risk of fire or explosion.

### Section 3. 成分/组成信息

#### COMPOSITION INFORMATION

化学成分 Chemical Composition	化学式 Chemical Formula	CAS 号 CAS No.	重量百分比 (约) Weight (%)(About)
Cobalt lithium manganese nickel oxide 锂镍锰钴氧化物	$\text{CoH}_3\text{LiMnNiO}$	346417-97-8	≤45
Graphite 石墨	$\text{C}_{24}\text{X}_{12}$	7782-42-5	20~35
Polyvinylidene fluoride resin 聚偏氟乙烯树脂	$(\text{C}_2\text{H}_2\text{F}_2)_n$	24937-79-9	< 2
Carbon black 炭黑	C	1333-86-4	0.2~3
Carbonic acid, ethyl methyl ester 碳酸甲乙酯	$\text{C}_4\text{H}_8\text{O}_3$	623-53-0	10~18
Phosphate(1-), hexafluoro-, lithium 六氟磷酸盐(1-)	$\text{F}_6\text{LiP}$	21324-40-3	

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## Section 4. 急救措施

### First aid measures

食入：引用两杯牛奶或水。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

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.

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.

## Section 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: lots of water, CO2

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

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Hazardous Combustion Products: Carbon monoxide, carbon dioxide, lithium oxide fumes.

## Section 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

Steps to be taken in case Material is Released or Spilled

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。

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 contain for disposal.

废弃物处置方法

Waste Disposal Method

电池的循环寿命是有限的，充满电后的电池使用时间比较短时，需要更换新的电池。

Despite being rechargeable, the battery has a limited life span, Replace when usage time between charges becomes short.

请提供所有电池用于回收符合当地的指导和监管。禁止扔入垃圾箱。

Please offer all used batteries for recycling according with local guidelines and regulation. Do not throw in the trash.

## Section 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 any liquids.

操作处置和储存中的防范措施

Precautions to be taken during handling and storage

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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、通风等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。

Avoid mechanical or electrical abuse. Preferably storage 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.

其他防范措施

Other Precautions

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。

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

## Section 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:正常使用条件下不需要。

Ventilation: Not necessary under conditions of normal use.

防护手套:正常使用条件下不需要。

Protective Gloves: Not necessary under conditions of normal use.

其他防护服装或设备:正常使用条件下不需要。

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要准备的。

Personal Protection is recommended for venting battery: Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

## Section 9. 理学特性

### Physical and chemical properties

外形： 棱柱形

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Appearance: Prismatic

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.

燃点： 除单个电芯暴露试验外其他不适用。

Flash Point: Not applicable unless individual components exposed.

可燃性： 除单个电芯暴露试验外其他不适用。

Flammability: Not applicable unless individual components exposed.

相对密度： 除单个电芯暴露试验外其他不适用。

Relative density: Not applicable unless individual components exposed

溶解性（水溶性）： 除单个电芯暴露试验外其他不适用。

Solubility (water): Not applicable unless individual components exposed

溶解性（其他）： 除单个电芯暴露试验外其他不适用。

Solubility (other): Not applicable unless individual components exposed

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## Section 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、短路或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 or expose.

应避免的材料：氧化剂，碱，水。

Materials to avoid: Oxidizing 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、强碱或卤代烃接触。

If leaked, forbidden to contact with strong oxidizers、mineral acids、strong alkalies or halogenated hydrocarbons.

## Section 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

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食入：吞下中毒。

Ingestion: Poisoning if swallowed.

下列情况下健康状况会恶化：万一发生与电池内部材料接触的事故，轻微或严重的刺激，都可能使皮肤出现干燥和灼烧的感觉，并且损坏靶器官（肝脏，肾脏）的神经。

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to severe irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

## Section 12. 生态学资料

### Ecological information

正常使用时，电芯/电池不会有生态和环境方面的影响。

There is no influence to ecology and environment when used properly.

## Section 13. 废弃处置

### Disposal consideration

废弃电芯不能直接当作普通垃圾处理，用塑料袋装好密封放入回收电池的垃圾桶或当作特殊垃圾处理。废弃电芯不能丢进火中和置于高温环境，不要拆卸，同时不能刺穿和挤压等等。电芯的包装纸盒和塑料盒可作为普通垃圾处理。

Depleted batteries shouldn't be treated as ordinary trash. Worn out batteries must be discharged, placed in plastic bags and then put into recycle bin. Shouldn't be thrown into fire or placed in high temperature. Shouldn't be dissected, pierced, crushed or treated similarly. The package and plastic box which contain batteries could be treated as ordinary trash. Best way is recycling.

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**Section 14. 运输信息****Transport information**

运输标签 Label for conveyance	锂电池标记, 第 9 类锂电池危险品标签, 仅限货机标签 Lithium Battery Mark, Class 9 lithium battery hazard label, Cargo Aircraft Only Label
UN 编号 UN Number	UN3480, UN3481, UN3171
正确运输名称 UN Proper shipping name	UN3480-PSN: 锂离子电池 UN3481-PSN: 锂离子电池安装在设备中 UN3171-PSN: 电池驱动的车辆 UN3480-PSN: Lithium Ion Batteries UN3481-PSN: Lithium Ion Batteries Contained in Equipment or Lithium Ion Batteries Packed with Equipment. UN3171-PSN: Battery-powered Vehicle.
包装类别 Packing group	II
海洋污染物 Marine pollutant	NO
EmS 编号: EmS No:	F-A , S-I F-A , S-I

危害分类: 货物符合国际航空运输协会第65 版本 DGR 中 965 IA 部分的要求或 967 条包装说明 第I部分的要求(2024年版)和 特殊规定 188 海运危险货物规则 (Amdt.41-22)。该货物按照最新修正的 41-22版的《国际海运危险货物规则》为非危险品。根据特别条款 188, 本条不受国际海事组织《国际海运危险货物规则》(41-22版)其他条款的约束

Hazard Classification: Packaging complies with the requirements of section IA of Packing instructions 965 or section I 967 of 65th DGR Manual of IATA (2024 edition) or special provision 188 of IMDG CODE (Amdt.41-22). The goods are classified as non-dangerous goods in accordance with the latest revision of the International Maritime Dangerous Goods Code (Amdt41-22), the article is not subject to other provisions of IMO IMDG Code according to special provision 188.

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**Section 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 Title III (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.

**Section 16. 其他信息****Other information**

本 MSDS 中的信息不对益阳科力远电池有限责任公司生产的所有电池有效。本文信息来源可靠，但我们不保证来源描述的完整性、精确性等。使用者须掌握正确使用电池的方法并对电池的使用负责，上海储融检测技术有限公司对由于电池的滥用而造成的伤害和损失不承担责任。

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