

材料安全数据表

Material Safety Data Sheet

第一部分: 化学产品和公司信息

Section 1 - Chemical Product and Company Identification

产品名称: 二氧化锰锂原电池

Product Name: Li-/MnO₂ Battery

标称电压: 3.0V

Nominal Voltage: 3.0V

电池类型:

Battery Type:

类型 Type	锂(g) Lithium(gr.)
CR1025	0.01
CR1216	0.01
CR1220	0.01
CR1225	0.01
CR1616	0.01
CR1620	0.02
CR1625	0.02
CR1632	0.03
CR2016	0.02
CR2025	0.04
CR2032	0.06

类型 Type	锂(g) Lithium(gr.)
CR2032-SL	0.06
CR2320	0.04
CR2330	0.07
CR2354	0.13
CR2430	0.07
CR2450	0.16
CR2477	0.26
CR3032	0.15
CR2032HT	0.06
CR2050HT	0.09
CR2450HT	0.14

供应商: 惠州亿纬锂能股份有限公司

Manufacturer: EVE Energy Co., Ltd

地址: 广东省惠州市仲恺高新区惠风七路 38 号

Address: No. 38, Huifeng 7th Road, Zhongkai High-tech Zone, Huizhou, Guangdong, China

邮政编码: 516006

Post Code: 516006

电话: 0752-2606966

Emergency Telephone: 0752-2606966

传真: 0752-2606033

Fax: 0752-2606033邮箱: quality@evebattery.com**E-mail:** quality@evebattery.com

注:

电池既不是物质也不是混合物, 而是一种在正常使用和运输过程中对生命和健康没有风

险的产品。这是由于我们的电池凭借良好的金属密封外壳,从而使得内部的成分不会泄露出来。

本表表明了电池在异常使用下可能存在的风险,但是主要目的还是提供一些关于成分、处理方式和运输规定等方面的信息。

Note: the battery is neither substance nor mixture but product and having no risk to life and the health under normal use or transportation because ingredients of battery is not leaked out by virtue of hermetical sealing with metal case.

This sheet notifies possible risk of our battery under abnormal use but mainly aim to provide information about ingredients, notification of handing and transportation regulations as a useful reference.

第二部分: 成分信息

Section 2 – Composition/Information on Ingredient

化学名称 Chemical Name	CAS No.	重量分数 (%) . % wt.
二氧化锰 Manganese dioxide	1313-13-9	30
石墨 Graphite	7782-42-5	1.2
炭黑 Carbon black	1333-86-4	1.2
聚四氟乙烯 Polytetrafluoroethylene	9002-84-0	1.0
锂 Lithium	7439-93-2	2.6
PC Propylene Carbonate-solvent	108-32-7	2.3
DME 1,2 Dimethoxyethane-solvent	110-71-4	2.1
锂盐 Lithium salt	7791-03-9	2.4
聚丙烯 (PP) Polypropylene (PP)	9003-07-0	4.2
不锈钢 Stainless steel	12597-68-1	53

第三部分: 有害物质鉴定

Section 3 - Hazards Identification

重要有害物和不利化学 产品影响 The important hazards and adverse effects of the chemical product	无可用信息。 No information available.
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特定有害化学产品 Chemical product - specific hazards	无可用信息。 No information available.
预计紧急情况概要 Outline of an anticipated emergency	<p>1.化学成分密封在金属壳体中。因此，除非机械破坏或者电池滥用，否则绝不会有泄漏风险的发生。 Chemical contents are sealed in metal can. Therefore, risk of exposure never occurs unless battery is mechanically or electrically abuse.</p> <p>2.如果电池被加热到 100 摄氏度以上的话，则有可能引起火灾爆炸的危险。另外当电池堆叠防止或者在颠簸的情况下可能导致外部短路，发热情况发生。在一些特定情况下会引起火灾或者爆炸。 Risk of explosion by fire is anticipated if batteries are disposed of in fire of heated above 100 degree Celsius. Stacking or jumbling of batteries may cause external short circuits, heat generation, in some case, allowing fire or explosion.</p>

注: 我司的电池未按照 GHS 的分类进行分类。

Note: Our battery is not classified in accordance with the GHS classification.

第四部分: 急救措施

Section 4 - First Aid Measures

眼部 Eye	<p>用大量水冲洗眼睛至少 15 分钟，并且要不时地提起上下眼睑； 等待医疗援助。 Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids; Get medical aid.</p>
吸入 Inhalation	<p>从暴露处移开并立即移至有新鲜空气的地方； 如果条件允许的话请使用氧气。 Remove from exposure and move to fresh air immediately; Use oxygen if available.</p>
皮肤 Skin	<p>脱下被污染的衣服，并且用大量水冲淋受损皮肤至少 15 分钟； 等待医疗援助。 Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes; Get medical aid.</p>
食入 Ingestion	<p>至少喝两杯牛奶或者水； 如果患者有意识的情况下，尽量诱导他呕吐； 联系医务人员。 Give at least 2 glasses of milk or water; Induce vomiting unless patient is unconscious; Call a physician.</p>

第五部分: 灭火器

Section 5 - Fire extinguishing agent

灭火剂:

干粉化学药品，抗酒精泡沫，粉末，雾化水，二氧化碳干粉都是有效果的。

Fire extinguishing agent:

Dry chemical, alcohol resistant foam, powder, atomized water, carbon dioxide dry sand are effective.

灭火方式:

将电池紧急拿到安全的地方,防止因着火而引起火势蔓延。

由于电池的包装材料是纸,因此可以使用水灭火器,二氧化碳灭火器或粉末灭火器作为常规灭火器。

由于电池燃烧产生的气体可能会刺激眼睛、鼻子和喉咙,因此请务必扑灭迎风面的火。在某些情况下,请佩戴呼吸防护设备。

Extinguisher method:

Escape batteries to safe place prevent from ignition by spreading fire.

Because packaging material of battery is paper, use water extinguisher, CO2 extinguisher or powder extinguisher as normal extinguisher.

Since vapor, generated from burning batteries may take eyes, nose and throat irritate, be Sure to extinguish the fire on the windward side. Wear the respiratory protection equipment in some cases.

第六部分: 泄露应急处理

Section 6 - Accidental Release Measures

I 物料泄露或者溢出应采取的步骤:

如果电池材料发生了泄露,请将泄露区域的人员疏散,直至烟雾/气味消散。提供最大的通风以清除有害气体。用布擦拭干净,然后将其装入塑料袋中并放入钢罐中。离开该区域并且让电池冷却,提供最大的通风,避免皮肤和眼睛接触或者吸入气体。最后用吸收剂清除溢出的液体并且将其焚化。

I 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.

I 废弃物处理方式

建议先将电池完全放电,收集起废弃的电池统一交给相关部门,并且按照当地和政府的相关批准处理电池(详细的处理细则应当咨询相关政府的环境保护机构)。

I Waste Disposal Method

It is recommended to discharge the battery to the end, handing in the abandoned batteries to related department unified, dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental protection agency and/or federal EPA.

第七部分: 处理和储存

Section 7 - Handling and Storage

请勿打开、破坏或者焚烧电池，电池可能会因此泄露或者破裂，从而将其中所含的成分泄露到环境之中。切勿使电池两端短路、过度充电、强行过度放电或将电池扔入火中；请勿挤压、刺穿电池或将其浸入液体中。

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.

I 搬运及存放注意事项

避免机械破坏或者电池滥用；电池最好存放在温度变化很小的阴凉，干燥和通风的地方；请勿将电池放在加热设备中，也不要长时间暴露在直射的阳光下（避免在高温下存放）。

I 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.

I 其它注意事项

当发生拆卸、压碎或暴露于火或高温情况下，电池可能会发生爆炸或引起灼伤；请勿将电池短路或者极性错误安装。

I 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.

第八部分：个人接触保护

Section 8 - Exposure Controls, Personal Protection

I 呼吸系统防护

如果电池出现泄放，请保持通风状态，避免环境封闭。在正常使用条件下，不需要使用呼吸防护器具。

I 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.

I 通风

在正常使用条件下没有必要。

I Ventilation

Not necessary under conditions of normal use.

I 防护手套

在正常使用条件下没有必要。

I Protective Gloves

Not necessary under conditions of normal use.

I 其它防护服或者设备

在正常使用条件下没有必要；

泄放电池防护设备建议：呼吸防护器具，防护手套，防护服和带侧罩的安全玻璃。

I Other Protective Clothing or Equipment

Not necessary under conditions of normal use;

Personal Protection is recommended for venting battery: Respiratory protection, Protective gloves, protective clothing and safety glass with side shields.

第九部分：物理和化学特性

Section 9 - Physical and Chemical Properties

状态：固体。

形状：扣式。

State: Solid.

Shape: Coin-type.

第十部分：稳定性和反应性

Section 10 - Stability and Reactivity

I 稳定性

稳定

I Stability

Stable

I 应避免的情况

加热，机械破坏和电力滥用。

I Conditions to Avoid

Heating, mechanical abuse and electrical abuse.

I 危险分解产物

N/A.

I Hazardous Decomposition Products

N/A.

I 危险聚合物

N/A.

I Hazardous Polymerization

N/A.

如果出现泄露情况，严禁与强氧化剂，无机酸，强碱和卤代烃接触。

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

第十一部分：毒理学相关

Section 11 - Toxicological Information

当电池打开的时候，皮肤和眼睛有可能会接触、吸入一些物质。当电池内部物质暴露时，腐蚀性烟雾对眼睛和呼吸道将会非常刺激过度接触会引起非纤维化肺损伤和膜刺激症状。

Inhalation, skin contact and eye contact are possible when the battery is opened. Exposure to internal contents, the corrosive fumes will be very irritating to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

第十二部分: 生态相关

Section 12 - Ecological Information

及时使用或者处置电池不会对环境造成危害, 处理过的电池请远离水和雪。

When promptly used or disposed the battery does not present environmental hazard.
When disposed, keep away from water, rain and snow.

第十三部分: 处置注意事项

Section 13 - Disposal Considerations

I 物质处置或者准备的适当方法:

如果电池仍然处于充满电状态或者部分放电状态, 则由于其仍含有大量未反应或废电池中剩余的未完全消耗的锂, 它们可被视为反应性危险废弃物。在将电池作为危险废物处置之前, 必须通过认可的二级处理设施对电池进行中和。电池的回收可以在废物运输商处用经过授权的设施进行处理。

I APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

If batteries are still fully charged or only partially discharged, they can be considered a reactive hazardous waste because of significant amount of not reaction or unconsumed lithium remaining in the spent battery. The battery must be neutralized through an approved secondary treatment facility prior to disposal as a hazardous waste. Recycling of battery can be done in authorized facility, through licensed waste carrier.

第十四部分: 运输相关

Section 14 - Transport Information

对于锂电池的国际运输, 必须遵守以下这些规定: 国际海事组织 (IMO) 的《国际海事危险货物 (IMDG) 规则》, 国际航空运输协会 (IATA) 的危险货物条例 (DGR) 和国际民用航空安全运输航空危险货物的技术说明 (TI) 组织 (ICAO) 这些法规基于《联合国关于危险货物运输的建议书》, 《测试和标准手册》。

For the international transport of lithium batteries, they must comply with these regulations: the International Maritime Dangerous Goods (IMDG) Code by International Maritime Organization (IMO), Dangerous Goods Regulations (DGR) by International Air Transport Association (IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by International Civil Aviation Organization (ICAO). These regulations are based on the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria.

符合 UN38.3 要求的锂电池 (联合国测试和标准手册, 第 III 部分, 第 38.3 小节) 可以作为普通货物空运和海运, 否则应按照第 II 类危险品包装的第 9 类进行运输。

Lithium batteries which meet the requirements of UN38.3 (UN Manual of Tests and Criteria, Part III, subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group II hazardous goods.

随着《联合国关于危险货物运输的建议书》的发布, 所有这些法规都增加了一些新内容, 以规范锂电池的运输。自 2009 年 1 月 1 日起应遵守这些规定。根据国际航空运输协会 (IATA) 危险物品法规第 65 版对锂电池/电池运输的最新更改之后, 锂电池最佳方案 024 将取代最

佳方案 023, 并与 2024 年 1 月 1 日生效。

As the published of the UN Recommendations on the Transport of Dangerous Goods, all these regulations have added some new contents to regulate the transport of lithium metal batteries. And they should be complied since January 1, 2009. Following the latest changes on Lithium Cells / Batteries shipment as per the 65th edition of IATA Dangerous Goods Regulations, the Lithium Battery Best Practice 024 will replace Best Practice 023 and with effect from January 1, 2024.

1. 对于锂金属电池, UD ID 号为 3090。对于设备中包含的锂金属电池或设备负有锂金属的电池, UN ID 号为 3091。

For lithium metal batteries, UN ID number is 3090. For lithium metal batteries contained in equipment or lithium metal batteries packed with equipment, UN ID number is 3091.

2. 应使用适当的运输名称充分描述该货物并包装、标记和在适当的条件下以空运方式运输。在当前版本的 IATA 第 65 条“有效, 危险品”法规以及所有适用的承运人和政府法规中, 这批货物未归类为危险品。

The consignment should be fully described by proper shipping name and packed, marked and in proper condition for carriage by air. The consignment is not classified as dangerous under the current edition of IATA 65th Effective, Dangerous goods regulation and all applicable carrier and government regulations.

3. 对于运输时的空气要求, 作为“非限制”货物运输的锂金属电池芯/电池必须相应地遵守 PI 968 的 IB 节和 IA 节。根据 IB 部分的要求: 对于扣式电池来说, 锂净含量不应超过 1g; 对于电池组来说, 锂的净含量不应超过 2g。除了第 9 类危险标签和“仅限货机”标签(由制造商标记)以外, 每个包装件还必须贴有锂电池处理标签。根据 IA 部分要求, 包装必须贴有 9 级危险标签和“仅限货机”标签。

PI 969 的 II 节(电池, 与设备一起包装)或 PI 970 的 II 节(电池, 包含在设备中), 包装上必须贴有锂电池处理标签。

For transported air, Lithium-metal Cells/Batteries shipped as Cargo, Must comply with Section I B and Section I A of PI 968 accordingly. With Section IB requirements, for cells, the lithium net content should not be more than 1g; for batteries, the lithium net content should not be more than 2g. Each package must be labeled with a lithium battery handling label in addition to the Class 9 hazard label and the Cargo Aircraft Only label (marked by manufacturer). With Section IA requirements, the package must bear the Class 9 Hazard Label and the Cargo Aircraft Only label.

PI 969 Section II (Batteries, packed with equipment) or PI 970 Section II (Batteries, contained in equipment), the package must be labeled with a lithium battery handling label.

4. 每批货物必须随附文件, 例如带有说明的航空货运单。对于设备中包含的那些锂金属电池/电池组, 设备必须配备防止电池意外短路的有效方法。

Each consignment must be accompanied with a document such as an air waybill with an indication. For those Lithium metal cells/batteries contained in equipment, the equipment must be equipped with an effective means of preventing accidental activation.

5. 锂金属电池(电芯)的净重, 如按 PI 968 运输, 不得超过 2.5kg, 并应粘贴锂金属电池的标志; 锂金属电池的净运输量不得超过 PI 969 或 PI 970 的 5kg 运输量; 并且需要粘

贴锂金属电池标记。

The net quantity of lithium –metal battery (cells) , shall not exceed 2.5kg if transport as PI 968,and need to paste the Li-metal battery marking; The net quantity of lithium-metal battery (cells) shall not exceed 5kg if transport as PI 969 or PI 970; and need to paste the Li-metal battery marking.

6. 每个包装必须能够承受 1.2m 的跌落测试，且不会损坏其中的电池或电池组。

Each package must be capable of withstanding a 1.2m drop test in orientation without damage of cells or batteries contained therein.

7. 满足要求的锂电池可以通过航空运输，由惠州亿纬锂能股份有限公司制造的电池也满足这些要求。（被供应商出于安全原因将锂电池识别为有缺陷的（损坏、有放热危险、着火或短路）锂电池是被禁止运输的。）

Lithium batteries which meet the requirements of which could be transported by air, and the batteries manufactured by EVE Energy Co., Ltd meet these requirements. (Lithium batteries identified by the manufacturer as being defective for safety reasons, or that have been damaged, that have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden transport.)

8. 必须保护电池芯和电池，以防止短路情况发生，包括防止与同一包装内的导电材料接触而导致的短路。

Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packing that could lead to short circuit.

9. 锂金属电池适用于国际海上危险货物。

代码（IMDG-Code）特殊条款 188，因为它对应于以下两种情况之一：

电池中的锂含量小于 1 克或电池中的锂含量小于 2 克，因此，在符合运输条件的所有要求时，可以作为免税危险品运输。

Lithium –metal battery is applicable to the International Maritime Dangerous Goods. Code (IMDG-Code) Special provision 188 because it corresponds to either case that the cell – lithium content is less than 1g or the battery – lithium content is less than 2g, so it is permitted to transport as Exempted Dangerous Goods when it complies with all requirements of the transport conditions.

常用运输方式: 空运，海运。

Transport Fashion: by air, by sea.

包装手段: 包装纸+塑料托盘。

Packaging Information: packaging paper + plastic tray.

第十五部分：法规相关信息

Section 15 - Regulatory Information

I 法律方面：

《危险品条例》

《危险货物运输示范条例建议》

《国际海上危险货物》

《危险货物安全运输技术规程》

《危险品分类及代码》

《职业安全与健康法》（OSHA）

《有毒物质控制法》(TSCA)
《消费品安全法》(CPSA)
《联邦环境污染控制法》(FEPCA)
《石油污染法》(OPA)
《超级基金修正案和重新授权法》第三章 (302/311/312/313) (SARA)
《资源保护与恢复法》(RCRA)
《安全饮用水法》(CWA)
《加州 65 号提案》
《联邦法规代码》(CFR)
遵守所有省, 市、县和地方法律。

I Law Information

《Dangerous Goods Regulation》
《Recommendations on the Transport of Dangerous Goods Model Regulations》
《International Maritime Dangerous Goods》
《Technical Instructions for the Safe Transport of Dangerous Goods》
《Classification and code of dangerous goods》
《Occupational Safety and Health Act》(OSHA)
《Toxic Substances Control Act》(TSCA)
《Consumer Product Safety Act》(CPSA)
《Federal Environmental Pollution Control Act》(FEPCA)
《The Oil Pollution Act》(OPA)
《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》
(SARA)
《Resource Conservation and Recovery Act》(RCRA)
《Safety Drinking Water Act》(CWA)
《California Proposition 65》
《Code of Federal Regulations》(CFR)

In accordance with all federal, state and local laws.

第十六部分: 附加信息

Section 16 - Additional Information

以上信息是基于我们所了解的数据, 并据此认为是正确的。由于此信息可能会在我们无法控制的条件下使用, 另外可能因为不熟悉的我们的产品, 再加上在此数据之后提供的数据可能会对上述信息的修改, 因此我们对其使用结果不承担任何责任。我们提供此信息的前提是, 接收该信息的人应自行确定该材料是否适合其特定目的。

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