# PRODUCT SAFETY DATA SHEET

# 产品安全数据表

## Lithium ion rechargeable battery pack

### 13S3P INR21700-50GB

*According Regulation (EC) No 1907/2006 (REACH) a safety data sheet must be provided for substances and preparations only. Batteries are not affected by the requirements of this Regulation.*

根据法规（EC）第1907/2006号（范围），必须仅提供物质和制剂的安全数据表，电池不受本法规要求的影响。

## *1.* Identification of the substance and of the manufacturer对该物质和制造商的识别

Identification标识:

Product category：Lithium ion battery

产品类别：锂离子电池

Model name:型号名称:

EBT480-147SGDJX

Battery Pack:
电池组: 13S3P INR21700-50GB

Nominal voltage: 48 V

额定电压：48V

Nominal capacity: 14.7Ah

额定容量： 14.7Ah

Nominal energy: 687Wh

额定能量： 687Wh

Chemical system: Lithium-Ion (Li-ion)

化学系统：锂离子

Anode (negative electrode): based on intercalation graphite

负极：基于嵌层石墨

Cathode (positive electrode): based on lithiated metal oxide (Cobalt, Nickel, Manganese)

正极：基于锂化金属氧化物（钴，镍，锰）

Rechargeable: Yes

可再充电的：是的

Manufacturer Name: JOYCUBE BATTERY CO., LTD.

生产制造商：星久科能源（苏州）有限公司

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## 2. Hazards identification危险性概述

For the battery cell, chemical materials are stored in a hermetically sealed metal case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials' leakage.

对于电池电芯，化学材料必须存储在一个密封的金属外壳中，可以承受正常使用过程中遇到的温度和压力。因此，在正常使用过程中，不存在点火或爆炸的物理危险和危险品泄漏的化学危险。

However, if exposed to a fire, added mechanical shocks, decomposed, added electric stress by miss-use, the gas release vent will be operated. The battery cell case will be breached at the extreme, hazardous materials may be released.

然而，如果暴露在火灾中，增加机械冲击、分解、错误使用增加的电压力，气体释放口将被操作。电池电芯将在极端情况下被破坏，可能会释放危险物质。

Moreover, if heated strongly by the surrounding fire, acrid gas may be emitted.

此外，如果被周围的火强烈加热，可能会释放辛辣刺激气味。

・Most important hazard and effects

最重要的危害和影响

Human health effects:

人体健康的影响

Inhalation: The steam of the electrolyte has an anesthesia action and stimulates a respiratory tract.

吸入：电解质的蒸汽有麻醉做法，并刺激呼吸道。

Skin contact: The steam of the electrolyte stimulates a skin. The electrolyte skin contact causes a sore and stimulation on the skin.

皮肤接触: 电解质的蒸汽会刺激皮肤。皮肤接触电解质会引起皮肤疼痛和刺激。

Eye contact： The steam of the electrolyte stimulates eyes. The electrolyte eye contact causes a sore and stimulation on the eye. Especially, substance that causes a strong inflammation of the eyes is contained.

眼睛接触: 电解质的蒸汽会刺激眼睛。眼睛接触电解质会引起眼睛疼痛和刺激，特别是含有眼睛强烈炎症的物质。

Environmental effects: Since a battery cell remains in the environment, do not throw out it into the environment.
环境影响: 因为电池仍在环境中，不要把它仍在环境中。

・Specific hazards:If the electrolyte contacts with water, it will generate detrimental hydrogen fluoride.

特定危害:如果电解质与水接触，它会产生有害的氟化氢。

Since the leaked electrolyte is inflammable liquid, do not bring close to fire.

由于泄漏的电解质是易燃液体，不要靠近火源。

## *3.* COMPOSITION / INFORMATION ON INGREDIENTS 成分/组成信息

| | **Chemical Name** | **CAS No.** | ***Mass range in cell (g/g %)** |
|---|---|---|---|
| Electrolyte | Contains Electrolyte salt and solvents. | | 5~20 |
| Electrolyte salt | Lithium hexafluorophosphate | 21324-40-3 | 0.05~5 |
| Electrolyte solvent | Includes one or more of the following;<br>Ethelyne Carbonate<br>Propylene Carbonate<br>Diethyl Carbonate | 96-49-1<br>108-32-7<br>105-58-8<br>105-37-3 | 5~20 |
| PVDF | Polyvinylidenfluoride | 24937-79-9 | ＜1 |
| Copper | Cu | 7440-50-8 | 3~15 |
| Aluminium | Al | 7429-90-5 | 2~10 |
| Cathode | Lithium cobalt oxide | 12190-79-3 | 20~50 |
| Anode | Graphite | 7782-42-5 | 10~30 |
| Steel, Nickel, and inert components | | Various | Balance |

## *4.* First aid measures急救措施

**Spilled internal cell materials 溢出的内部电芯物质**

・Inhalation: Make the victim blow his/her nose, gargle. Seek medical attention if necessary.

吸入：让受害者擤鼻涕，漱口。如有必要，请就医。

・Skin contact: Remove contaminated clothes and shoes immediately. Wash extraneous matter or contact region with soap and plenty of water immediately.

皮肤接触:请立即脱掉受污染的衣服和鞋子。立即用肥皂和大量水清洗多余的物质或接触区域。

・Eye contact: Do not rub one’s eyes. Immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention immediately.

眼睛接触: 不要揉眼睛。立即用水连续清洗眼睛至少15分钟并立即就医。

**A battery cell and spilled internal cell materials 电池单元和溢出的内部电池材料**

・Ingestion: Make the victim vomit. When it is impossible or the feeling is not well after vomiting, seek medical attention.

摄入：让受害者呕吐。当不能呕吐或呕吐后感觉不适，请就医。

## *5.* Fire fighting measures 消防措施

In case of fire: Use dry chemical extinguishers.

发生火灾时：使用干燥化学灭火器

Caution: Before starting to extinguish the fire, be sure, that you are at windward of fire. So you cannot inhale toxic vapors.
注意:在开始灭火前，确保您处于火的迎风面，不能吸入有害的蒸汽。

・Suitable extinguishing media: Plenty of water, carbon dioxide gas, nitrogen gas, chemical powder fire extinguishing medium and fire foam.

适用灭火介质：充足的水、二氧化碳气体、氮气、化学粉末灭弧介质和火焰泡沫。

・Specific hazards: Corrosive gas may be emitted during fire.
特定危险：火灾过程中可能排放腐蚀性气体。

・Specific methods of fire-fighting：具体的灭火方法

When the battery burns with other combustibles simultaneously, take fire-extinguishing method which correspond to the combustibles. Extinguish a fire from the windward as much as possible.

当电池与其他可燃物同时燃烧时，采取与可燃物相对应的灭火方法。尽可能迎风扑灭火灾。

・Special protective equipment for firefighters: 消防员专用的防护装备：

Respiratory protection: Respiratory equipment of a gas cylinder style or protection-against-dust mask

呼吸防护：气瓶式或防尘口罩的呼吸设备

Hand protection: Protective gloves 手部防护：防护手套
Eye protection: Goggle or protective glasses designed to protect against liquid splashes

眼睛防护：护目镜或防护眼镜，以防止液体飞溅

Skin and body protection: Protective cloth

皮肤和身体防护：防护服

## 6. Accidental release measures 泄露应急处理

Spilled internal cell materials, such as electrolyte leaked from a battery cell, are carefully dealt with according to the followings.

内部电池物质的溢出，譬如从电池电芯泄露的电解质，将按一下方法进行仔细处理。

・Precautions for human body:人体注意事项

Remove spilled materials with protective equipment (protective glasses and protective gloves). Do not inhale the gas as much as possible. Moreover, avoid touching with as much as possible.

用防护装备（防护眼镜和防护手套）清楚溢出的材料。尽可能不要吸入气体。此外，尽可能避免触摸。

・Environmental precautions: Do not throw out into the environment.
环境注意事项：不要扔到环境中。

・Method of cleaning up: The spilled solids are put into a container. The leaked place is wiped off with dry cloth.

清理方法：将溢出的固体放入容器中，用干布擦拭泄露的地方。

・Prevention of secondary hazards: Avoid re-scattering. Do not bring the collected materials close to fire.
预防二次危害:避免重新散射。请勿将收集的物品靠近火源。

## 7. Handling and storage 操作处置与储存

Handling: Do not open the battery. Do not crush, disassemble, drop or solder.

操作处置：不要打开电池。不要积压、拆卸、丢落或焊接。

Charging: Charge within limits of 0 to 55 degree C ,Charge only with specified charger designed for this battery.

充电：在0-55℃内充电，使用电池对应的充电器充电。

Discharging: Discharge within limits of 55 degree C

排放：在55℃范围内排放
Caution: Wrong handling can cause fire or explosion.
注意：不当的操作会引起火灾或爆炸

Storage: Temperature: -10 to 35 degree C

存储：温度 -10℃-35℃

Humidity range: 0 % to 85 %

湿度范围：0%-85%

Well ventilated area.

通风良好的区域

Short circuit can ransom burn.

短路会引发燃烧。

Do not store with metal objects.

不要与金属物品一起存放。

## *8.* EXPOSURE CONTROLS / PERSONAL PROTECTION (WHEN THE ELECTROLYTE LEAKS)
接触控制/个体防护（当电解质泄露）

・Control parameters 控制参数

ACGIH has not been mentioned control parameter of electrolyte.
ACGIH没有提到电解液的控制参数

・Personal protective equipment 个人防护装置

Respiratory protection: Respirator with air cylinder, dust mask

呼吸防护：带气瓶的呼吸器、防尘口罩

Hand protection: Protective gloves

手部防护：防护手套
Eye protection: Goggle or protective glasses designed to protect against liquid splashes
眼镜防护： 护目镜或有防护设计的眼镜，防止液体飞溅
Skin and body protection: Working clothes with long sleeve and long trousers
皮肤和身体防护： 穿戴长袖和长裤

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

Appearance: 39 cells in black plastic housing .

外观：39个电芯有黑色塑料外壳

Weight: 13S3P 50GB Around 3.7kg

重量： 13S3P 50GB Around 3.7kg

Chemical properties: see Point 3

化学性质：请看第3点

## *10.* Stability and reactivity 稳定性和反应性

During a long storage the capacity will be reduced and the lifespan of the battery will be shorter.
The plastic housing can be damaged by leaking electrolyte.
长时间存放，容量会降低，电池寿命会缩短，塑料外壳可能会因电解液泄漏而损坏。

## *11.* Toxicological information 毒理学资料

Upon normal use there will be no leaking and, hence, there will be no contact with toxically ingredients of the battery.
正常使用时不会发生泄漏，因此不会与电池的有毒成分接触。

## 12. Ecological information 生态信息

Upon normal use there won't be any environmental pollution.
正常使用不会对环境造成任何污染。
If the battery is unusable, you must recycle it. See Point 13.
如果电池无法使用，则必须对其进行回收。 见第 13 点。

## 13.Disposal considerations 处置注意事项

The battery is hazardous waste.
电池是危险废物。
It is not allowed to dispose it with common waste.
不允许与普通垃圾一起处理。
If the battery is unusable, dispose it according to the applicable recycling regulations.
如果电池无法使用，请按照适用的回收规定进行处理。

## 14. Transportation information 运输信息

a) UN number: UN 3480 or UN3481 or UN3171
a) 联合国编号：UN 3480 or UN3481 or UN3171
UN proper shipping name

b) 联合国正确运输名称
ADR/RID/IMDG-Code:LITHIUM-ION-BATTERIES
ADR/RID/IMDG 代码：锂离子电池
ICAO-TI/IATA-DGR: LITHIUM ION BATTERIES
ICAO-TI/IATA-DGR：锂离子电池
b) Transport hazard class: 9 (Miscellaneous)
c) 运输危险等级：9（杂项）
c) Packing group: II (Substances presenting medium danger)
d) 包装类别：II（中等危险性物质）

***Note注意事项:***

*Cells and batteries, cells and batteries contained in equipment, or cells and batteries packed with equipment, containing lithium in any form shall be assigned to UN numbers 3480 or 3481 or 3171 as appropriate. They may be carried under these entries if they meet the following provisions:*

任何包含或者配锂有电池的设备，不论含是何种形式的锂，都应划归至UN3480或UN3481或UN3171条款下管束。如果它们符合以下规定，则可以在如下条目下携带：

*a) each cell or battery is of the type proved to meet the requirements of each test of the Manual of Test and Criteria, Part III, sub-section 38.3;*

a) 每个电池或电池的类型经证明符合《测试和标准手册》第 III 部分第 38.3 小节的每次测试要求；

*b) each cell and battery incorporates a safety venting device or is designed to preclude a violent rupture under normal conditions of carriage;*

b) 每个电池芯和电池组都装有安全排气装置或拥有防止在正常运输条件下发生剧烈破裂的设计；

*c) each cell and battery is equipped with an effective means of preventing external short circuits;*

c) 每个电芯和电池组都配备了防止外部短路的有效装置；

*d) each battery containing cells or series of cells connected in parallel is equipped with effective means as necessary to prevent dangerous reverse current flow (e.g. diodes, fuses, etc.)*

d) 每个包含电池或串联电池的电池均配备必要的有效装置以防止危险的反向电流流动（例如二极管、保险丝等）。

*e) cells and batteries shall be manufactured under a quality management program that includes:*

e) 电池和电池组应按照质量管理计划制造，包括：

*1. a description of the organizational structure and responsibilities of personnel with regard to design and product quality;*

*1. 关于设计和产品质量的组织结构和人员职责的描述；*

*2. the relevant inspection and test, quality control, quality assurance, and process operation instruction that will be used;*

*2. 将使用的相关检验检测、质量控制、质量保证和工艺操作指导书；*

*3. process controls that should include relevant activities to prevent and detect internal short circuit failure during manufacture of cells;*

3. 过程控制应包括在电池制造过程中预防和检测内部短路故障的相关活动；

*4. quality records, such as inspection reports, test data, calibration data and certificates. Test data shall be kept and made available to the competent authority upon request;*

4.质量记录，如检验报告、测试数据、校准数据和证书。 应保存测试数据，并根据要求提供给主管当局；

*5. management reviews to ensure the effective operation of the quality management program;*

5. 管理评审以确保质量管理方案的有效运行；

*6. a process for control of documents and their revision;*

6. 控制文件及其修订的过程；

*7. a means of control of cells or batteries that are not conforming to the type tested as mentioned in (a) above;*

7. 控制不符合上述（a）所述测试类型的电池或电池组的方法；

*8. training programs and qualification procedures for relevant personnel;*

*8.* 相关人员的培训方案和资格认定程序；

*9. procedures to ensure that there is no damage to the final product.*

*9. 确保最终产品没有损坏的程序。*

## 15. REGULATORY INFORMATION 监管信息

*Regulations specifically applicable to the product:*

*具体适用于产品的规定：*

*Wastes Disposal and Public Cleaning Law[Japan]*

*废物处理和公共清洁法[日本]*

*Law for Promotion of Effective Utilization of resources[Japan]*

*资源有效利用促进法[日本]*

*US Department of Transportation 49 Code of Federal Regulations[USA]*

*美国交通部 49 联邦法规[美国]*

## 16.Other information 其他信息

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

・本安全数据表中包含的信息基于当前的知识状况和现行法规。

・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.

・本安全数据表提供产品的健康、安全和环境方面的指导，不应被解释为对特定应用的技术性能或适用性的任何保证。