Report No. ATSM231119711

# 材料安全数据表

# Material Safety Data Sheet

| | |
|---|---|
| **Sample name :** | **Li-ION BATTERY PACK** |
| **样 品 名 称 :** | **锂离子电池组** |
| **Consignor :** | **Hytera Communications Corporation Limited** |
| **委 托 单 位 :** | **海能达通信股份有限公司** |

## 东莞市全测电子科技有限公司
## ATS Electronic Technology Co., Ltd.


东莞市全测电子科技有限公司
ATS Electronic Technology Co., Ltd.
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# 材料安全数据表
# Material Safety Data Sheet

| 1. Identification of the product and supplier (产品和厂商信息) | |
|---|---|
| **Name of goods**<br>**样品名称** | Li-ION BATTERY PACK<br>锂离子电池组 |
| **Type/Model**<br>**样品型号** | BL9903<br>14.8V, 12.5Ah,185Wh |
| **Commissioned by**<br>**委托单位** | Hytera Communications Corporation Limited<br>海能达通信股份有限公司 |
| **Commissioner address**<br>**委托单位地址** | Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, Guangdong, P.R. China<br>深圳市南山区高新区北区北环路9108号海能达大厦 |
| **Manufacturer**<br>**制造商** | Hytera Communications Corporation Limited<br>海能达通信股份有限公司 |
| **Manufacturer Address**<br>**制造商地址** | Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, Guangdong, P.R. China<br>深圳市南山区高新区北区北环路9108号海能达大厦 |
| **Factory**<br>**生产单位** | FPR Connectivity Technology (Dongguan) Inc.<br>路华置富电子(东莞)有限公司 |
| **Factory's address**<br>**生产单位地址** | Bldg 2, No.5 North Industry Rd, Songshan Lake, Dongguan, Guangdong, PRC.<br>广东省东莞市松山湖园区工业北路5号2栋 |
| **Inspection according to**<br>**鉴定依据** | EEC Directive 93/112/EC<br>联合国《关于危险品货物运输的建议书》<br>UN "Recommendations on the TRANSPORT OF DANGEROUS GOODS" |
| **Emergency telephone call**<br>**紧急联系电话** | +86-769-22285999 |
| 接样日期/ Receiving date: 2023-11-30 | 签发日期/ Issue date: 2024-01-01 |

**Tested by:** **主检:** 赵振

**Reviewed by:** **审 核:** 潘世泽

**Approved by:** **批 准:** 张振杰

东莞市全测电子科技有限公司
ATS Electronic Technology Co., Ltd

## 2. Composition/Information on Ingredient (成分/组成信息)

| Hazardous Ingredients (Chemical Name) | Concentration or concentration ranges (%) | CAS Number |
|---|---|---|
| Lithium cobaltate<br>钴酸锂 | 35-43 | 12190-79-3 |
| Graphite<br>石墨 | 20-22 | 7782-42-5 |
| Aluminium<br>铝 | 3-6 | 7429-90-5 |
| Copper<br>铜 | 5-9 | 7440-50-8 |
| Poly(vinylidene fluoride)<br>聚偏氟乙烯树脂 | 0.5-1 | 24937-79-9 |
| Lithium hexafluorophosphate<br>六氟磷酸锂 | 11-16 | 2132-40-3 |
| Nickel<br>镍 | 0.5-1.5 | 7440-02-0 |
| Polypropylene<br>聚丙烯 | 2-5 | 9003-07-0 |
| Poly(styrene-co-butadiene-co-methyl methacrylate)<br>甲基丙烯酸甲酯 | 0.5-1 | 25053-09-2 |

## 3. Hazards Identification (主要危险性鉴定)

| | |
|---|---|
| 爆炸危险性<br>Explosive risk | 该物品不属于爆炸危险品<br>This article does not belong to the explosion dangerous goods |
| 易燃危险性<br>Flammable risk | 该物品不属于易燃危险品<br>This article does not belong to the flammable material |
| 氧化危险性<br>Oxidation risk | 该物品不属于氧化危险品<br>This article does not belong to the oxidation of dangerous goods |
| 毒害危险性<br>Toxic risk | 该物品不属于毒害危险品<br>This article does not belong to the toxic dangerous goods |
| 放射危险性<br>Radioactive risk | 该物品不属于放射危险品<br>This article does not belong to the radiation of dangerous goods |
| 腐蚀危险性<br>Mordant risk | 该物品不属于腐蚀危险品<br>This article does not belong to the corrosion of dangerous goods |
| 其他危险性<br>other risk | 该物品为锂离子电池组，瓦时率为185Wh，属于第九类危险品。<br>This article is Li-ION BATTERY PACK, Watt hour rate 185Wh, which belong to the Class 9 - Lithium Battery hazard goods. |

# 4. First aid measures (急救措施)

**Eye 眼睛**

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
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。

**Skin 皮肤**

Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.
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。

**Inhalation 吸入**

Remove from exposure and move to fresh air immediately. Use oxygen if available.
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。

**Ingestion 食入**

Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.
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。

# 5. Fire-fighting measures (消防措施)

**Flash Point:** N/A.
**燃点：**不适用

**Auto-Ignition Temperature:** N/A.
**自燃温度：**不适用

**Extinguishing Media:** Water, CO2.
**灭火介质：**大量水（降温），二氧化碳

**Special Fire-Fighting Procedures**

Self-contained breathing apparatus.

**特殊灭火程序：**自给式呼吸器

**Unusual Fire and Explosion Hazards**

Cell may vent when subjected to excessive heat-exposing battery contents.

**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。

Hazardous Combustion Products

Carbon monoxide, carbon dioxide, lithium oxide fumes.
**燃烧产生的危险物品：**一氧化碳，二氧化碳，锂氧化物烟气

# 6. Accidental release measures (泄漏应急处理)

**Steps to be Taken in case Material is Released or Spilled 为防止电池材料泄露或释放采取的措施**

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.

如果电池内部材料泄露，操作人员应立刻撤离事故区直到烟气消散。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。

**Waste Disposal Method 废弃物处置方法**

It is recommended to discharge the battery to the end, to use up the metal lithium inside the battery, and to bury the discharged battery in soil.
建议将电池完全放电，锂金属电池消耗完电池内部的金属锂，并且交付给专业机构处理。

## 7. Handling and storage (操作处置和储存)

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.
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。

**Precautions to be taken in handling and storing 操作处置和储存中的防范措施**

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.
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于阳光中。

**Other Precautions 其他要注意的防范措施**

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.
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

## 8. Exposure controls/personal protection (接触控制/个人保护)

**Respiratory Protection 呼吸防护**

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.
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。

**Ventilation 通风条件**

Not necessary under conditions of normal use.
正常使用条件下不必考虑。

**Other Protective Clothing or Equipment 其他防护服装或设备**

Not necessary under conditions of normal use.
正常使用条件下不必考虑。

**Personal Protection is recommended for venting battery 电池开阀试验时应做好个人防护**

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

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

**Appearance:** Cuboid shape
**外形：** 长方体形状

**Ref. No.:** ATSU211111631
**认证编号：**ATSU211111631

**Odour:** If leaking, smells of medical ether.
**气味：** 泄漏时，有醚的气味。

**pH:** Not applicable as supplied.
**酸碱度：**不适用

**Flash Point:** Not applicable unless individual components exposed.
**闪点：**针对单个组分暴露情况，其他不适用。

**Flammability:** Not applicable unless individual components exposed.
**易燃度：**针对单个组分暴露情况，其他不适用

**Relative density:** 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。

**Solubility (water):** 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 (other):** 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。

## 10. Stability and reactivity (稳定性和反应活性)

**Stability:** Product is stable under conditions described in Section 7.
**稳定性：**产品在第7 节所述的条件下稳定。

**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。

**Materials to avoid:** Oxidising agents, alkalis, water.
**应避免的材料：**氧化剂，碱，水。

**Hazardous Decomposition Products:** Toxic Fumes, and may form peroxides.
**危险分解物：**有毒烟雾，并可能形成过氧化物。

**Hazardous Polymerization:** N/A.
**聚合危害：**不适用

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons.
如果发生泄露，避免与强氧化剂，无机酸，强碱，卤代烃接触。

## 11. Toxicological information (毒理性资料)

**Signs & symptoms:** None, unless battery ruptures.
**标志及症状：**无，除非电池破裂。

In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.
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。

**Inhalation:** Lung irritant.

**吸入：**对肺有刺激性。

**Skin contact:** Skin irritant
**皮肤接触：**对皮肤刺激性。

**Eye contact:** Eye irritant
**眼睛接触：**对眼睛有刺激性。

**Ingestion:** Poisoning if swallowed
**食入：**吞下中毒。

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.
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。

## 12. Ecological information (生态学资料)

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

**Eco-toxicity:** None known at present.
**生态毒性：**目前未知。

**Bioaccumulation potential:** Slowly Bio-degradable.
**生物体内积累：**慢慢地生物降解。

**Environmental fate:** None known environmental hazards at present.
**环境危害：**目前没有已知的环境危害。

## 13. Disposal consideration (废弃处置)

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.
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。

## 14. Transport information (运输信息)

**Label for conveyance:** Class 9 lithium battery hazard label, Cargo Aircraft Only Label
**运输标签：**九类锂电池危险标签，仅限货机标签

**UN Number:** UN3480 & UN3481
**UN 编号：**UN3480 & UN3481

**Packing Group:** II
**包装类别：**II

**Land transport (ADR/RID):** Class 9
**陆地运输(ADR/RID)：**9类

**Sea transport (IMDG):** Class 9
**海上运输(IMDG)：**9类

**Air transport (ICAO-TI/IATA DGR):** Class 9
**航空运输(IMDG)：**9类

**Proper Shipping name:** 1) Lithium ion batteries; 2) Lithium ion batteries packed with equipment; 3) Lithium ion batteries contained in equipment. (including Lithium ion polymer batteries)

**正确的装运名称：**1） 锂离子电池；2）与设备包装在一起的锂离子电池；3）安装在设备中的锂离子电池（包括锂离子聚合物电池）
**Hazard Classification:** The goods shall be complied with the requirements of Section IA of Packing Instructions 965~967 of 65th DGR Manual of IATA (2024 edition), including the passing of the UN38.3 test. And also complies with the P903 of IMDG CODE (Amdt 41-22) Edition.
**危害分类：**货物应符合IATA(2024版)第65版DGR手册包装说明965第IA部分的要求，包括通过UN38.3测试。并符合《国际危规》(Amdt 41-22版)。

## 15. Regulation information (法规信息)

Major applicable regulations for the transportation of lithium-ion cells and batteries are as follows:
锂离子电池和蓄电池运输的主要适用规定如下:

The UN Model Regulations: United Nations ST/SG/AC.10/1/Rev.20. Recommendations on the Safe Transport of Dangerous Goods
联合国示范条例:联合国ST/SG/AC.10/1/Rev.20。关于危险货物安全运输的建议

The International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air Transport
国际民用航空组织(民航组织)危险货物安全航空运输技术规程

The International Air Transport Association (IATA) Dangerous Goods Regulations (65th Edition 2024)
国际航空运输协会(IATA)危险货物条例(第65版2024)

International Maritime Organization (IMO): International Maritime Dangerous Goods Code. (P903 of IMDG CODE (Amdt 41-22) Edition)
国际海事组织:《国际海上危险货物规则》。(IMDG CODE (Amdt 41-22)版P903)

OSHA Hazard communication standard (29 CFR 1910)
OSHA危险通信标准(29 CFR 1910)

| | | | |
|---|---|---|---|
| √ | Hazardous 危险 | | Non-hazard 非危险 |

## 16. Other information (其他信息)

This file is only effective to the batteries（BL9903） provided by commissioner Hytera Communications Corporation Limited which manufactured by FPR Connectivity Technology (Dongguan) Inc. commissioner provides the composition information of batteries, and promises its integrity and curacy. Users should read this file carefully, and use the batteries in correct method. ATS Electronic Technology Co., Ltd. doesn't assume responsibility for any damage or loss cause of misuse of batteries.

本文件仅对由海能达通信股份有限公司提供的，并由路华置富电子(东莞)有限公司生产的电池（BL9903）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，东莞市全测电子科技有限公司不承担任何责任。