



Huafu High Technology Energy Storage Co.,LTD

Battery Industrial Park of Gaoyou, Gaoyou Economic Development Zone, Yangzhou City, Jiangsu, China

Tel	0514-84540810	镍钴锰酸锂电池产品安全技术说明书(MSDS) Ternary Lithium ion Battery Product Safety Technology Manual (MSDS)	Page	Page 1 of 8
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第一部分：产品名称及企业标识

Part 1: Product Name and Corporate logo

产品信息：

Product information:

名称：镍钴锰酸锂电池

Name: Ternary Lithium ion battery

型号：7-ITR -20-EV

Model: 7-ITR -20-EV

企业信息：

Corporate Information:

厂家：江苏华富储能新技术股份有限公司

Manufacturer: JIANGSU HUAFU HIGH TECHNOLOGY ENERGY STORAGE CO. LTD.

地址：中国江苏省高邮市高邮经济开发区蓄电池工业园波司登大道100号

Address: NO.100 Bosideng Rd, Battery Industrial Park of Gaoyou City, Gaoyou Economic Development Zone,

Jiangsu Province, China

电话：0514-84540586

Tel: 0514-84540586

第二部分：成分/组成信息

Part 2: Material /Composition Information

组分	CAS 号	含量/% (约)
镍钴锰酸锂	—	2-10%
石墨	7782-42-5	0-40%
铝	7429-90-5	1%
铜	7440-50-8	3.3%
聚偏氟乙烯树脂	24937-79-9	0-28%



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炭黑	1333-86-4	0-15%
六氟磷酸锂	21324-40-3	2.7%

Components	CAS number	Content/% (approx.)
Ternary lithium	—	2-10%
graphite	7782-42-5	0-40%
aluminum	7429-90-5	1%
copper	7440-50-8	3.3%
PVDF	24937-79-9	0-28%
Carbon black	1333-86-4	0-15%
LiPF6	21324-40-3	2.7%

第三部分：危险性概述

Part 3: Risk Overview

正常情况下，按照生产商提供的使用说明来使用，一般是不会有危险的。在滥用的情况下，可能会有内部物质泄漏、发热、着火、外壳开裂等情况发生造成人身伤害和财产损失。滥用情况包括但不限于以下情况：长时间充电、短路、放入火中、用硬物敲击、用尖锐的物体刺穿、挤压、折断等。

In normal circumstances, according to the manufacturer's instructions for use is generally not dangerous. In the case of abuse, personal injury and property damage may occur due to internal material leakage, heat generation, fire, shell cracking, etc. Abuse includes but not limited to the following: charging for a long time, short-circuiting, putting into a fire, hitting with a hard object, piercing with a sharp object, squeezing, breaking, etc.

第四部分：急救措施

Part 4: First Aid Measures

在正常的情况下，眼睛接触、皮肤接触是不会有危害的。

In normal circumstances, eye contact, skin contact will not be harmful.



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如果电池着火或开裂，会泄漏内部有害物质和生成有害物质，如有接触，采取以下措施：

If the battery catches fire or cracks, it will leak internal harmful substances and generate harmful substances. If there is contact, take the following measures:

眼睛接触后，立即用清水冲洗 15 分钟，就医；

Eyes: Flush immediately with large amounts of water for at least 15 minutes, and then consult physician.

皮肤接触后，用清水冲洗 15 分钟，如果情况严重，就医；

Skin: Flush immediately with large amounts of water for at least 15 minutes, if the condition is serious, consult physician.

吸入后，立即转移到有新鲜空气的地方，就医，同时对受污染区域通风；

Inhalation, Remove to fresh air immediately, consult physician and ventilate contaminated areas at the same time;

食入后，立即用清水漱口，在专业人士的指导下催吐，就医。

Ingestion: Rinse with clear water immediately, induced under the guidance of professionals, consult physician.

第五部分：消防措施

Part 5: Fire Fighting Measures

可用水、干粉灭火器、砂子、土等灭火。燃烧产物和内部物质与空气和水接触的生成物包括：一氧化碳、二氧化碳、氟化氢、氟氧化磷等。

Use water, dry powder fire extinguishers, sand, soil, etc. to extinguish the fire. The products of combustion products and internal substances in contact with air and water include: carbon monoxide, carbon dioxide, hydrogen fluoride, phosphorus oxyfluoride, etc.

第六部分：泄漏应急处理

Part 6: Emergency Response to Leakage

电池内部物质泄漏后，用砂子、土或其它惰性物质吸收，并及时通风。

After the internal material of the battery leaks, it is absorbed by sand, soil or other inert substances and ventilated in time.



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第七部分：操作处置与储存

Part 7: Operation disposal and storage

在操作和存放时不要使用金属器件和容器。电池在常温下 (<30℃) 放置，通风除湿，远离火源和热源。

Do not use metal devices and containers during operation and storage. The battery is placed at room temperature (< 30 C), ventilated and dehumidifying, away from the fire source and heat source.

第八部分：接触控制与个体防护

Part 8: Contact control and individual protection

正常的情况下，个人不需要防护。在工程方面，需要有抽气通风设备。

如有着火和内部物质泄漏，在处理时需要戴防毒面具、护目镜、耐化学腐蚀的手套和穿防护服装。

In normal circumstances, individuals do not need protection. In the field of engineering, there is a need for ventilation.

In the case of fire and internal material leakage, it is necessary to wear gas masks, goggles, and chemical resistant gloves during treatment and wear protective clothing.

第九部分：理化特性

Part 9: Physical and chemical characteristics

电池不是一种单一化学品，没有特定的理化性能如熔沸点等。

A battery is not a single chemical, without specific physical and chemical properties, such as boiling points.

第十部分：稳定性和反应性

Part 10: Stability and reactivity

在正常的情况下，电池是安全的。

电池着火或者内部物质泄漏后，可能出现的物质有：有机碳酸酯、氟化氢、一氧化碳、二氧化碳、氟氧化磷等。

In normal circumstances, the battery is safe.

The battery ignition or internal leakage, possible material: organic carbonates, carbon monoxide, carbon dioxide,



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hydrogen fluoride, fluorine phosphorus etc.

第十一部分：毒理学资料

Part 11: Toxicological data

正常使用时，电池没有毒性。

电池着火或者内部物质泄漏后，燃烧产物、电池内部各组分及其与水份接触后的分解产物对人体皮肤、眼睛和呼吸系统有一定的刺激性和毒性。此处列举部分物质的毒理学数据。

氟化氢：

有较大的毒性。吸入和食入可致命。可通过皮肤吸收。可诱导突变。LCLo: 50 ppm/30m (人), LC50: 1276 ppm/1h (小白鼠)。

碳和石墨：

皮肤接触有刺激性，吸入和食入有轻微的危害，对上呼吸道和心血管系统有慢性损害。

铜：

粉尘对呼吸系统有刺激。LD50: 3.5 mg /kg (小白鼠)。

铝：

没有毒性。

铁：

粉尘对呼吸系统有危害。LD50: 30mg/kg (小白鼠)。

The battery is not toxic when it is used normally.

When the battery is on fire or the internal matter leaks, the combustion products, the components in the battery and the decomposed products after contacting with the water have certain stimulation and toxicity to the human skin, eyes and respiratory system. The toxicological data of some of the substances are listed here.

Hydrogen fluoride:

It has greater toxicity. Inhalation and feeding can be fatal. It can be absorbed through the skin. It can induce mutation. LCLo: 50 ppm/30m (human), LC50:1276 ppm/1h (mouse).

Carbon and graphite:

Skin contact is irritant, inhalation and feeding are minor hazards, and have chronic damage to the upper respiratory and cardiovascular systems.

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Copper:

Dust is irritating to the respiratory system. LD50:3.5 mg /kg (mouse).

Aluminum:

No toxicity.

Iron:

Dust is harmful to the respiratory system. LD50:30mg/kg (mouse).

第十二部分：生态学资料

Part 12: Ecological data

正常使用时，电池不会有生态和环境方面的影响。

In normal use, the battery does not have an ecological and environmental impact.

第十三部分：废弃处置

Part 13: Discarding and disposing

废弃电池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。废弃电池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。电池的包装纸盒和塑料盒可作为普通垃圾处理。

The waste battery can't be treated as a waste directly, sealed in a plastic bag, and put into trash for recycling battery, or as a special garbage disposal. The waste battery can't be thrown into the fire and in the high temperature environment, do not disassemble, and can't be pierced and extruded and so on. The battery pack cartons and plastic boxes can be treated as ordinary garbage.

第十四部分：运输信息

Part 14: Transportation information

UN 文件中，锂金属/合金电池和锂离子电池合称为“锂电池/组”，UN 编号 3090；“装配在设备中的锂电池/组”和“同设备包装在一起的锂电池/组”等作为部件的锂电池/组，UN 编号 3091。

锂电池的国际运输有以下组织制定了规则：国际海事组织 IMO《国际海运危险货物规则》，国际航空运输协会



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IATA《危险品规则》，国际民航组织 ICAO《危险物品航空安全运输技术导则》。以上规则均以《联合国关于危险货物运输的建议，测试和标准手册》作为基础。锂电池未通过 UN38.3（《联合国关于危险货物运输的建议，测试和标准手册》第三部分第 38.3 条）检测者，均不能作为普通货物进行航空及海洋运输；未做 UN38.3 检测者，需经批准后按 9 类危险品 II 类包装运输。

In the UN file, lithium metal / alloy battery and lithium ion battery are collectively referred to as "lithium battery / group", UN number 3090, "lithium battery / group assembled in the device" and "lithium battery / pack packaged with the same equipment" as parts of the lithium battery / group, UN number 3091.

The international transportation of lithium battery has the following rules: the International Maritime Organization IMO international maritime dangerous goods rule, the International Air Transport Association IATA dangerous goods rules, and the International Civil Aviation Organization ICAO guidelines for aviation safety transportation of dangerous goods. The above rules are based on the United Nations Recommendations on the transport of dangerous goods, testing and standard manual. The lithium battery through the UN38.3 ("the United Nations Recommendations on the transport of dangerous goods, manual of tests and criteria" third part article 38.3) detection, are not as common goods of aviation and marine transportation; do not need UN38.3 testing, after approval by the 9 categories of dangerous goods of class II transport packaging.

第十五部分：法规信息

Part 15: Legal Information

无锂离子电池管理方面的法规。

There is no regulation on the management of lithium ion batteries.

第十六部分：其它信息

Part 16: Other information

本 MSDS 中的信息不对江苏华富储能新技术股份有限公司生产的所有电池有效。本文信息来源可靠，但江苏华富储能新技术股份有限公司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，江苏华富储能新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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guarantee the completeness and accuracy of the source description. Users must master the correct way to use batteries and be responsible for the use of batteries. Huafu High Technology Energy Storage Co. LTD is not liable for injuries and losses caused by battery abuse.