

产品安全数据信息 MSDS

PRODUCT SAFETY DATA MSDS

产品名称：锂离子电池

PRODUCT NAME: LITHIUM-ION BATTERY

产品名称：锂离子电池
化学品用途：可反复充放电电池
厂商资料：

化学品运输紧急应变中心：1-800-424-9300

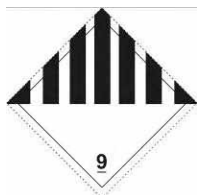
Product Name: Lithium-Ion Battery
Chemical Use :Battery
Manufacturer:

Chemical Transport Emergency Center : 1-800-424-9300

产品信息 PRODUCT INFORMATION

a) 物质或化合物和供应商的标识 Substance/Compound And Supplier's Logo;

b) 危险标识 Danger Sign:



c) 成分构成/成分信息 COMPOSITION/INFORMATION ON INGREDIENTS:

电池型号: LYP/LP Product Model:LYP/LP			
成分 Ingredient	重量% Weight %	化学文摘号 Cas No.	备注 Notes
稀土钇 Rare Earth Y	1.5%	7440-65-5	-----
碳酸锂 Li ₂ CO ₃	16%	554-13-2	-----
锰 Mn	43.4%	7439-96-5	-----
钙 Ca	0.3%	7440-70-2	-----
碳纤维 Graphite	5%	7782-42-5	-----
钠 Na	1.5%	7440-23-5	-----
碳 C	3.1%	7440-44-0	-----
铁 Fe	3.4%	7439-89-6	-----
聚氨基甲酸酯 PE	3.3%	9002-88-4	-----
铜 Cu	10%	7440-50-8	-----
铝 Al	6%	7429-90-5	-----
钾 K	1.7%	7440-09-7	-----
氟 F	3.3%	7782-41-4	-----
锶 Sr	1.5%	7440-24-6	-----

d) 急救措施 FIRST AID MEASURES:

1. 万一电池破裂、冒烟、燃烧的情况下，首先应疏散危险区人员，并且提供最大的烟气通风口来排除烟雾气体；同时立即用水喷淋或将冒烟燃烧的电池浸泡在水中。

In case of battery rupture, fume or fire, evacuate personnel from contaminated area and provide maximum ventilation to clean out fumes/gases. Meantime, spray the battery with water or put the smoking battery into basin at once.

2. 万一以下情况发生时，请立即就医：

In case the following occur, seek medical attention immediately.

- (1) 与眼睛接触：用大量清水冲洗至少 15 分钟（保持眼帘打开）或立即到医院就医。

Eye contact: Flush with plenty of water (eyelids held open) for at least 15 minutes or go to the hospital for help immediately.

- (2) 与皮肤接触: 脱掉所有受污染的衣物, 用大量的清水清洗受污染皮肤, 肥皂清洗至少 15 分钟, 请勿使用任何油类及软药膏。

Skin contact : Remove all contaminated clothing and flush affected areas with plenty of Water and soap for at least 15 minutes Do not apply greases or ointments.

- (3) 摄入: 用大量的水进行稀释并且立即就医, 误吞食电池部分物质, 不会造成即时危险。在确保感染者没有使用催吐剂, 确保粘液没有阻隔呼吸道时, 建议到医院就医。

Ingestion: Dilute by giving plenty of water and get immediate medical attention, swallowed part of the substance of the battery will not cause immediate danger. Assure that the victim does not aspirate vomited material by use of positional drainage. Assure that mucus does not obstruct the airway. Seek for medical attention.

- (4) 吸入: 立即将受害者移至新鲜空气处并给受污染区域通风; 必要时通氧气或者人工呼吸。

Inhalation: Remove to fresh air and ventilate the contaminated area. Give oxygen or artificial respiration if needed.

e) 消防措施 FIRE-FIGHTING MEASURES:

1. 灭火媒介: 如果电池冒烟或燃烧, 最好的解决方法是采用水喷淋电池或者把冒烟燃烧的电池迅速放入到水中。

Extinguishing media: spray the battery with water or put the smoking /fire battery into water at once if the battery fume or fire.

2. 灭火器材: D 型灭火器, 二氧化碳灭火器, 干粉灭火器及泡沫灭火器。

Extinguishing tools : Type D extinguishers , Co2, Dry chemical or Foam extinguishers.

f) 事故排除措施 ACCIDENT RELEASE MEASURES:

万一电池破裂或在滥用的情况下、冒烟、着火, 应立即把电池浸入水中, 或者用大量持续的水喷淋, 或者在其冷却后放在特定的容器中, 并根据当地的相关规定处理。

In case of battery rupture, or fume/fire under abuse, put the smoking /fire battery into water at once , or soak under water or spray with copious amounts of water , place in approved container after cooling, and dispose in accordance with local regulations

g) 搬运和存储 HANDLING AND STORAGE:

1. 搬运: 可采用叉车或卡板搬运, 电池搬运时只能立放, 要轻拿轻放, 不能倒放或侧放和丢摔。

Carriage: can use forklifts or pallets, stand up the battery gently when move. Do not upside down or on its side or throw.

2. 存储：把电池存放在凉爽通风的环境下（最佳温度为 $+25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ），和远离水源，热源及火源，电池放置需与墙壁保持适当距离；不要挤压、穿透电池，或者是使用导电物质促使电池短路；不要直接加热或者焊接电池；不要把不同型号及品牌的电池混用；不要新旧电池混用；把电池置放在非导电托盘或者塑料托盘中。需要长期存放的电池，不能倒置储存，首先将电池充电至荷电 40-60%，以后需每月检查电池的开路电压，确定存放的同批电池的电压一致或相差在许可范围内，如发现电池电压低于 3.0V 时应该尽快补充充电。一般情况下电池每月自放电率 $\leq 3\%$ ，每半年应补充充电一次即可。

Storage: Store in a cool preferably condition (optimum temperature at $+25^{\circ}\text{C} \pm 5^{\circ}\text{C}$) and ventilated area away from moisture, sources of heat, open flames. Keep adequate clearance between walls and batteries. Do not crush, pierce, short (+) and (-) battery terminals with conductive goods. Do not directly heat or solder batteries. Do not mix batteries of different types and brands. Do not mix new and used batteries; keep batteries in non-conductive or plastic trays. If need long term storage, do not store upside down, charge the batteries to 40-60% at first, and check the battery's open circuit voltage monthly is needed, make sure the voltage in the same batch to be consistent or difference within permitted extent. Charge the batteries immediately if the voltage of the batteries under 3.0V. The regular self-discharge rate is less than 3% every month. Charge the batteries once per half a year.

h) 接触控制/人身保护 CONTACT CONTROLS/PERSONAL PROTECTION:

1. 放在儿童不可触到的地方。
2. 电池泄漏或破裂时，避免皮肤直接接触。
3. 皮肤组织防护：正常使用下无需使用。在处置泄露电池时，使用氟胶手套和遮蔽罩。
4. 眼部防护：正常使用下无需使用。在处置泄露或者破裂电池时，穿防护衣和防护镜。
5. 呼吸防护：正常使用下无需使用。在电池破裂时，使用自给全脸呼吸设备。

1. Keep out of reach from children.
2. Avoid contact with skin when the battery leak or rupture.
3. Skin protection: Not necessary under normal use. Use rubber apron and protective working in case of handling of a ruptured battery.
4. Eye protection: Not necessary under normal use. Wear safety goggles or glasses with side shields if handling a leaking or ruptured battery.
5. Respiratory protection: Not necessary under normal use. In case of battery rupture, use self-contained full-face respiratory equipment.

i) 物理和化学特性 PHYSICAL AND CHEMICAL PROPERTIES:

1. 物理特性：锂离子可充电电池是密封式外壳，在正常使用和电池无损坏和密封完整的情况下电池不会产生爆炸和起火的危险。只有在电池被滥用（如：机械能、热能、电能超标及受外来火源影响的情况下），导致电池安全阀的启动或者电池壳破裂，泄露出液体时，在潮湿或有水的情况下，电极物质可能发生反应或引发电池冒烟。为了预防电池由于内部过压及温度过高引发的危险，我们的电池设计了安全阀装置来确

保电池壳不被损伤破裂。

Physical characteristics : The lithium-ion rechargeable batteries are with sealed case, and under normal use and the seals remain intact, Our batteries are with no risk of explosion or fire .Only in case of abuse(i.e. over normal mechanical power、 heat、 electrical power and under the influence of external sources of ignition),which leads to the activation of the safety valve or the rupture of the battery container, which cause the electrolyte leak, electrode materials reaction with moisture/water or battery vent. In case of excessive internal pressure ,Our batteries design with a safety vent to protect the cell case from rupture.

2. 化学特性 Chemical Characteristics:

根据标准 67/548/EEC 指示的产品中含有危险物质的等级分类如下:

Classification of dangerous substances contained into the product as directive 67/548/EEC

物质 Substance		融化点 Melting Point	沸点 Boiling Point	分类 Classification			
CASNO	化学式 Chemical Formula			暴露极限 Exposure Limit	危险指示 Indication Of Danger	特殊风险 (1) Special Risk(1)	安全指示 (2) Safety Advice(2)
7440-65-5	LiFeYPO4	> 1000°C	N/A			R22 R43	S2 S22 S24 S26 S36 S37 S43 S45
EC: 96-49-111 DMC: 616-38-6 DEC:105-58-8 EA:141-78-6	有机溶液 (DC-DMCDE C-EA) Organic Solution	EC: 38°C DMC: 4°C DEC: -43°C EA: -84°C	EC: 24°C DMC: 90°C DEC: 127°C EA: 77°C	OSHA 中未规定 Unfound OSHA	易燃的 Inflammable	R21 R22 R41 R42 R43	S2 S24 S26 S36 S37 S45
21324-40-3	LiPF6	N/A (分解于 160°C) N/A (Decomposing in 160°C)	N/A	OSHA 中未规定 Unfound OSHA	刺激物/腐蚀 Stimulator Corrosion	R14 R21 R22 R41 R43	S2 S8 S22 S24 S26 S36 S37 S45

j) 稳定性和反应性STABILITY AND REACTIVITY:

1. 应避免的条件: 温度高于 85°C 或者焚烧电池。使变形、毁坏、挤压、分解、拉长或者把电池置于潮湿的环境。
2. 电解质中的 LiPF6 与水发生的化学反应将产生氟氧化物及二氧化碳。

3. 在燃烧中可能会形成氟化物 (HF) 与磷氧化物。

1. Conditions To Avoid : Heat above 85 ° C or incinerate. Deform, mutilate, crush, disassemble, elongate or exposure to humid condition.
2. Reaction of LiPF₆ with water to form Oxyfluoride and CO₂.
3. Formation of Hydrogen fluoride (HF) and phosphorous oxides during fire.

k) 毒理学信息 TOXICOLOGICAL INFORMATION:

我们的锂离子充电电池不含有毒物。

Our lithium rechargeable battery does not contain toxic materials.

l) 生态信息 ECOLOGICAL INFORMATION:

当正确使用至电池寿命终止时,可回收再造,我们的锂离子充电电池不会带来环境污染。
Under normal conditions of use till the end of the battery life,it can recycle and won't bring any pollution to the environment.

m) 处理考虑 DISPOSAL CONSIDERATIONS:

1. 根据可适用的规则处理, 因各国法律而异。
2. 锂离子电池的电极必须保持绝缘并且最好在处理前用独立塑料包装袋包装。
3. 使用者不可焚烧电池, 只能由权威的机构合理回收处理。
 1. Dispose in accordance with applicable regulations, which vary from country to country.
 2. Lithium-Ion batteries should have their terminals insulated and be preferably wrapped in individual plastic bags prior to disposal.
 3. Do not dispose of the battery into fire except for authorized agency.

n) 运输信息 TRANSPORT INFORMATION:

1. UN-NO.3480			
ARD /RID			
九类	二类包装	ARD/RID 标签	9
适当运输品名	锂离子电池, UN3480		
Class 9	Packing Group II	ADR/RID-Labels	9
Proper shipping name	Lithium-ion batteries, UN3480		
IMO			
等级	二类包装	IMO-标签	9
适当运输品名	锂离子电池, UN3480		
Class	Packing Group II	IMO-Labels	9
Proper shipping name	Lithium-ion batteries, UN3480		
IATA-DGR			

等级	二类包装	ICAO-标签	9
适当运输品名	锂离子电池, UN3480		
Class	Packing Group II	ICAO-Labels	9
Proper shipping name	Lithium-ion batteries, UN3480		

2. 我们的产品符合联合国手册及测试标准下条理 38.3 的要求。

Our Battery .declares that UN Manual of Tests and Criteria, Part III, sub-section 38.3 is met.

3. 在航空运输中，当他们能够满足 IATA 条款 UN3480 条款下 Ed.57 规定的要求和 ICAO 包装要求 965 条款 II 的要求及每个包装不高于 10KG 的要求情况下，小容量的(单体≤20WH 或者电池组≤100WH) 锂离子电池被认为是期望型产品。在通用的 IATA 规定下，标题货物可以像正常的货物一样运输。

In airfreight, small Lithium-ion batteries (cells≤20WH or packs≤100WH) are considered as “Expected Lithium-ion Batteries”, when they meet the requirements of Ed. 55 of IATA regulations (UN3480) and ICAO Packing Instruction 965 section II, specifying less than 10kg gross per package. Caption shipment can move as normal cargo under current IATA .

4. 在其他情况下（针对电池容量单体 > 20WH 或者电池组 > 100WH），锂离子电池被认为是九类产品（如 965 条款 I 空运要求）。

In other cases (mainly for large cells >20WH or packs > 100WH), they are considered as Class 9 (See Packing Instruction 965 section I for airfreight).

5. 在航海运输中，当电池满足 IMO 中 IMDG 危险产品的规定（UN3480）情况下，密封的锂离子电池被认为是不受限制-锂离子电池。

In the shipping by sea , sealed Lithium-ion batteries are considered as “Lithium-ion Batteries-Not Restricted”, when they meet the requirements of IMDG of IMO Dangerous Goods Regulations (UN3480).

6. 关于可充电锂离子电池的运输各种机构的相关规定，请参考 IATA，IMO，ADR/RID。

The transport of rechargeable lithium-ion batteries is regulated by various bodies, refer to: IATA, IMO, ADR/RID.

o) 管理信息 MANAGEMENT INFORMATION:

1. 温度范围 Temperature range

	持续 Continuous	瞬间 Instant
储存 Storage	+25°C ± 5°C	
放电 Discharge	-25°C/+75°C	-45°C/+85°C
充电 Charge	-25°C/+75°C	-45°C/+85°C

2. 比能：（备注： WH=标准电压*额定安时）KG=平均电池重量

Specific Energy: (Note: Wh = Normal voltage x Rated Ah) kg = Average battery weight)

3. 比脉冲功率：600W-1200W/KG, 视电池尺寸不同。
Specific Pulse Power: 600w-1200w/kg Varies depending upon size
4. 机械阻力：如 IEC 标准相关规定
Mechanical Resistance : As defined in relevant IEC standard

p) 其他信息/免责声明OTHER INFORMATION/DISCLAIMER:

1. 此资料从其编译来源上被认为是可靠的，据我们所知及确信从我们编辑之日起是可靠并且准确的。但是，这儿需要指出的对于此材料的制造精准，可靠性和完整性不作出任何形式的陈述及表达和隐含的担保。
 2. 这一信息关系到指定的特定材料，这种材料用于结合其他资料或任何的过程不再有效。使用者将承担对其因为其适宜性和信息完整性满足个人需求或者用于特定用途承担责任。
 3. 我们的电池对于任何直接、附带地、间接地使用本信息造成的损害及损失，不承担任何责任。我们的电池根据知识侵权不提供任何担保。对于以上指定目的需求，请拨打电话，将被提供更多的信息。
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1. This information has been compiled from sources considered to be dependable and is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy, reliability or completeness of the information contained herein.
 2. This information relates to the specific materials designated and may not be valid for such material used in combination with any other materials or in any process. It is the user's responsibility to satisfy himself as to the suitability and completeness of this information for his particular use.
 3. Our Battery does not accept liability for any loss or damage that may occur whether direct, indirect, incidental or consequential, from the use of this information. Our Battery does not offer warranty against patent infringement. Additional information will be available by making a phone call on above designated purpose.