TCT 通测检测
TESTING CENTRE TECHNOLOGY

Material Safety Data Sheet

MSDS Report

MSDS

Applicant's name	*Schumacher Europe*
Applicant's Address	*Rue de la Baronnerie 3 – B4920 Harzé - Belgium*
Name of Sample **样品名称**	$LiFePO_4$ Battery 磷酸铁锂电池
Model **型号**	1084165TP
Nominal Voltage **标称电压**	12.8V
Rated Capacity **额定容量**	7500mAh, 96Wh
Weight **重量**	976.4g
Size 尺寸 **(L×W×T)**	(183.0×89.0×38.0)mm
Prepared By **编制单位**	Shenzhen TCT Testing Technology Co., Ltd. 深圳市通测检测技术有限公司 1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China 广东省深圳市宝安区福永桥头亿宝来工业城 1 栋 1 层 B
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Inspected by 审核: Amy Zeng 曾红 **Date 日期:** 2021.01.01

SHENZHEN TCT TESTING TECHNOLOGY CO., LTD. TCT

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Material Safety Data Sheet 化学品安全技术说明书

Section 1- Chemical Product & Company Identification 第一部分 化学品及企业标识	
Name of Sample *样品名称*	LiFePO4 Battery 磷酸铁锂电池
Manufacturer's name *制造商名称*	
Manufacturer's Address *制造商地址*	. 佛山市南海区狮山科技工业园
Contact Person *联系人*	
Tel *电话*	
Fax *传真*	
Emergency Tel *应急电话*	
E-mail *邮箱*	

Section 2- Hazards Identification 第二部分 危险性概述	
Classification of Danger *危险性类别*	See section 14. 见第十四部分。
Primary Route(s) of Exposure *浸入途径*	Eye, skin contact, ingestion. 眼睛，皮肤接触，摄入。
Health Hazard *健康危害*	The batteries are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's Hazard of rupture, fire, heat, leakage of internal components, which could cause casualty loss. Abuses including but not limited to the following cases: charged for long time, short circuited, put into fire, whacked with hard object, punctured with acute object, crushed, and broken. 正常条件下根据制造商的说明使用电池不会产生危害。使用不当的情况下，有破裂、起火、发烫、内部成分泄漏的危险，并可能造成意外损失。使用不当的行为包括但不限于下列情况：长时间充电、短路、投入火中、硬物撞击、尖物刺破、破碎，和破裂。

Section 3- Composition/Information on Ingredients
第三部分 成分/组成信息

Chemical Name 化学名称	*Concentration or concentration ranges (%)* 浓度或浓度范围(%)	*CAS Number* CAS 号(化学文摘索引登记号)
Lithium Iron Phosphate 磷酸铁锂	32.5	15365-14-7
Polyvinylidene Fluoride 聚偏氟乙烯	2.60	24937-79-9
Aluminum 铝	8.10	7429-90-5
Graphite 石墨	16.45	7782-42-5
Styrene Butadiene Rubber 丁苯橡胶	0.45	9003-55-8
Carboxymethyl Cellulose 羧甲基纤维素	0.35	9000-11-7
Copper 铜	15.60	7440-50-8
Phosphate(1-), Hexafluoro-, Lithium 六氟磷酸锂	16.45	21324-40-3
Polyethylene 聚乙烯	6.75	9002-88-4
Ethylene-Propylene-Diene Monomer 三元乙丙橡胶	0.75	24937-16-4

Labeling according to EC directives.
标签根据 EC 指令。
No symbol and Hazard phrase are required.
不需要象形符号和危险短语。
Note: CAS number is Chemical Abstract Service Registry Number.
注意: CAS 号是化学文摘服务注册号码。
N/A=Not apply.
N / A =不适用。

Section 4- First Aid Measures
第四部分 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 ，翻起上下眼睑，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	Give at least 2 glasses of milk or water. Induce vomiting unless patient is

食入	unconscious. Call a physician. 饮用至少两杯牛奶或水。如果当事人仍然清醒可以采取催吐的方法，并且立即就医。

Section 5- Fire Fighting Measures
第五部分 消防措施

Characteristics of Hazard *危险特性*	Dusts at sufficient concentrations can form explosive mixtures with air. Combustion generates toxic fumes. 高密度粉尘遇空气会形成爆炸性混合物。燃烧生成有毒烟雾。
Hazardous Combustion Products *燃烧产生的危险物品*	Carbon dioxide. 二氧化碳。
Fire-extinguishing Methods and Extinguishing Media *灭火方法及灭火剂*	For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. 对于小型火险，可使用水枪，干冰（也就是液态二氧化碳）或化学泡沫。
Attention in Fire-extinguishing *灭火注意事项*	Wear self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. 因为压强关系，要穿戴可呼吸式全身防护装备，MSHA/NIOSH ，以及佩戴全套防护装置。

Section 6- Accidental Release Measures
第六部分 泄露应急处理

Personal Precautions, protective equipment, and emergency procedures *个人预防措施、防护装备和应急程序*	In case of rupture. Attention! Corrosive material. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Refer to protective measures listed in Sections 7 and 8. 万一破裂。注意！腐蚀性物质。避免接触皮肤，眼睛或衣服。确保空气流通。根据需要使用个人防护装备。将人员撤离到安全区域。让人们远离溢出/泄漏处和处于逆风。参考第七部分和第八部分中列出的防护措施。
Environmental Precautions *环境保护措施*	Prevent product from contaminating soil and from entering sewers or waterways. 防止产品污染土壤和进入下水道或水道。
Methods and materials for Containment *方法和材料控制*	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately. 出于安全，阻止泄漏，可以用干砂或泥土来遏制液体溢出，立即清理溢出物。
Methods and materials for cleaning up *清理的方法和材料*	Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all

	contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal. 用惰性吸收剂(干砂或泥土)吸收溢出的材料。污染物转移到可接受的废物容器中。收集所有受污染的吸收剂，按照第十三部分的说明进行处理。用洗涤剂和水清洁污染区域，收集所有受污染的洗涤水，妥善处理。

Section 7- Handling and Storage
第七部分 操作处置与储存

Handling *操作*	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。禁止短路或将电池正负极错误的安装在设备中。
Storage *储存*	Store in a cool, dry, well-ventilated area away from incompatible substances. Store locked up. Keep out of the reach of children. 储藏于阴凉，干燥，通风处，远离接触会发生反应的材料。存储锁定。放在儿童无法接触的地方。
Other Precautions *其他要注意的防范措施*	In case of rupture. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment. 万一破裂。按照良好的工业卫生和安全规范进行操作。避免接触皮肤，眼睛或衣服。使用个人防护设备。

Section 8 - Exposure Controls/Personal Protection
第八部分 接触控制和个体防护

Engineering Controls *工程控制*	Use adequate ventilation to keep airborne concentrations low. If used under conditions that generate particulates, the ACGIH TLV-TWA of 3mg/m^3 respirable fraction (10mg/m^3 total) should be observed. 保证空气流通使空气密度保持在低水平。如果在会生成微粒的情况下使用，应仔细观察 3mg/m^3 ACGIH TLV-TWA 3 的吸入量（总量为 10mg/m^3）。
Personal Protective Equipment *个人防护设备*	Eye and Face Protection: None required for consumer use. If there is a Hazard of contact: Tight sealing safety goggles. Face protection shield. 眼睛和脸部保护：消费者无需使用。如果有接触危险：密封安全护目镜。面部防护罩。 Skin and Body Protection: None required for consumer use. If there is a Hazard of contact: Wear protective gloves and protective clothing. 皮肤和身体防护：消费者无需使用。如果有接触危险：

	穿戴防护手套和防护服。 Respiratory Protection: No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. 呼吸系统防护：正常使用条件下不需要防护设备。如果超过暴露限值或发生刺激，可能需要通风和疏散。

Section 9- Physical and Chemical Properties
第九部分 理化特性

Physical State *物理状态*	Appearance: Prismatic 外形：棱柱形
	Color: Blue 颜色：蓝色
	Odour: If leaking, smells of medical ether. 气味：泄漏时，医用乙醚的气味。
Change in condition: *变化的条件:*	
pH 酸碱度	Not applicable as supplied. 不适用。
Flash Point 闪点	Not applicable unless individual components exposed. 除非单个的组件暴露，否则不适用。
Flammability 易燃度	Not applicable unless individual components exposed. 除非单个的组件暴露，否则不适用。
Relative density: 相对密度	Not applicable unless individual components exposed. 除非单个的组件暴露，否则不适用。
Solubility (water) 溶解性（水溶性）	Not applicable unless individual components exposed. 除非单个的组件暴露，否则不适用。
Solubility (other) 溶解性（其他）	Not applicable unless individual components exposed. 除非单个的组件暴露，否则不适用。

Section 10 – Stability and Reactivity
第十部分 稳定性和反应性

Chemical Stability *化学稳定性*	Stable under recommended storage conditions. 在推荐的储存条件下可以保持稳定。
Possibility of Hazardous Reactions *危险反应的可能性*	None under normal processing. 正常处理下没有。
Conditions to Avoid *应避免的条件*	Exposure to air or moisture over prolonged periods. 暴露在空气中或长时间受潮。
Incompatible materials	Acids, Oxidizing agents, Bases.

不相容材料	酸，氧化剂，碱。
Hazardous Decomposition Products *有危害分解物*	Carbon oxides. 二氧化碳。

Section 11 – Toxicological Information
第十一部分 毒理学信息

Irritation *刺激*	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。
Sensitization *致敏*	Not Available. 不适用。
Reproductive Toxicity *再生毒性*	Not Available. 不适用。
Toxicologically Synergistic Materials *协同材料毒理学*	Not Available. 不适用。

Section 12-Ecological Information
第十二部分 生态学信息

General note: *通用信息：*	Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. 不允许未稀释或大量的产品接触地下水、水道或污水处理系统。
Anticipated behavior of a chemical product in environment/possible environmental impact/ ecotoxicity *化学产品在环境/可能的环境预期的行为的一种生态毒性*	Not Available. 不适用。

Section 13 – Disposal Considerations
第十三部分 废弃处置

Waste Treatment *废弃处置方法*	Recycle or dispose of in accordance with government, state & local regulations. 建议遵照国家和地方法规处置或再利用。
Attention for Waste Treatment *废弃注意事项*	Deserted batteries shouldn't be treated as ordinary trash. Shouldn't be thrown into fire or placed in high temperature. Shouldn't be dissected, pierced, crushed or treated similarly. Best disposal method is recycling. 废电池不能被当作普通垃圾。不能扔进火中或置于高温下。不能解体，刺穿，破碎或类似的处理。最好的处理办法是回收利用。

Section 14 Transport Information
第十四部分 运输信息

UN number *联合国货物编号（UN 编号）*	3480 & 3481
Proper shipping name *运输专用名称*	Lithium ion batteries (limited to a maximum of 30% SoC) or; 锂离子电池(荷电状态不得超过其额定容量的 30%)或； Lithium ion batteries packed with equipment (including lithium ion polymer batteries) or; 与设备一起包装的锂离子电池(包括锂离子聚合物电池)或； Lithium ion batteries contained in equipments (including lithium ion polymer batteries). 包含在设备中的锂离子电池(包括锂离子聚合物电池) 。
Label(s) / Placard Required *标签/标牌要求*	Miscellaneous Lithium batt 杂项锂电池

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.
无论是对内还是对外的运输或运输方式，用户都需要注意或遵守的特殊预防措施。

ICAO / IATA: 国际民间航空组织/国际航空运输协会：	Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instructions (PI) 965 Section II/Section IB, PI 966 Section II and PI 967 Section II appropriate of IATA DGR 62nd (2021 Edition) for transportation. 货物可根据民用航空组织（ICAO），TI 或国际航空运输协会（IATA），DGR 62nd （2021 版）包装说明(PI)965 Section II/Section IB，PI 966 Section II 和 PI 967 Section II 相关规定进行空运。
IMDG CODE: 国际海运危险货物规则：	The batteries are not restricted to IMDG Code 2018 Edition (Amdt 39-18) according to special provision 188. 根据特殊规定 188，该电池不受 IMDG Code 2018 版(Amdt 39-18)限制。
DOT: 美国运输部：	Other requirements for the US Department of Transportation (DOT) Subchapter C, Hazardous Materials Regulations if shipped in compliance with 49 CFR 173.185. 美国运输部（DOT）有害物质规则 C 分章中的其他规定，运输符合要求 49 CFR 173.185。
ADR/ ADN: 欧洲国际陆运危险货物协定/关于内陆水道国际运输危险货物的欧洲协定：	The batteries are not subject to the provisions of United Nations Economic Commission for Europe (UNECE) ADR/ADN if they meet the requirements of special provision 188 of Chapter 3.3. Applicable as from 1 January 2019. 自 2019 年 1 月 1 日起适用于联合国欧洲经济委员会（UNECE）ADR / ADN，如果电池符合第 3.3 章第 188 条的特殊要求，则电池不受限制。

In addition, to be permitted in transport each lithium cell and battery types must have passed the applicable tests set out in Subsection 38.3 of the UN Manual of Tests and Criteria.
此外，每个锂电芯和电池类型都必须通过联合国 试验和标准手册》 38.3 定的适用测试。

Section 15 – Regulatory Information
第十五部分 法规信息

Dangerous Goods Regulations

《危险物品规则》

Recommendations on the Transport of Dangerous Goods-Model Regulations (21st revised edition)

联合国《关于危险货物运输的建议书 规章范本》（21st 修订版）

Recommendations on the Transport of Dangerous Goods-Manual of Tests and Criteria

联合国《关于危险货物运输的建议书 试验和标准手册》

International Air Transport Association (IATA)

《国际航空运输协会》（IATA）

International Maritime Dangerous Goods (IMDG Code 2018 Edition Amdt 39-18)

《国际海运危险货物规则》（IMDG Code 2018 版 Amdt 39-18）

Technical Instructions for the Safe Transport of Dangerous Goods

《危险货物安全运输技术指南》

Classification and code of dangerous goods (GB 6944-2012)

《危险货物分类和品名编号》- GB 6944-2012

2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

2012《职业安全与健康标准》危险通信标准（29 CFR 1910.1200）

Toxic Substance Control Act (TSCA)

《有毒物质控制法》（TSCA）

Code of Federal Regulations

《联邦条例》

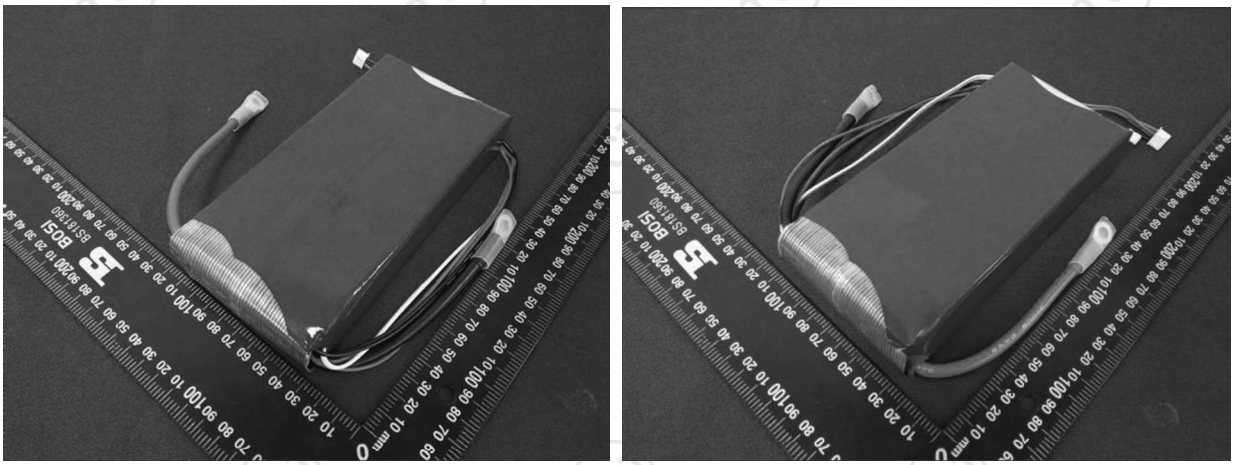
In accordance with all Federal, State and local laws

符合所有联邦、州和地方法律

Section 16 – Additional Information
第十六部分 其他信息

MSDS creation date: 2021 Version: 1.0

Sample photo 样品照片:



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