MSDS 报告
MSDS Report

报告编号： Report No.：	LA2026B1899001M

样品名称 Samples	铁锂电池 LiFePO4 Battery
样品型号 Model	TSBAT12-100L-WT
委托单位 Applicant	Tycon Systems, Inc
签发日期 Issue Date	2026-10-27

深圳市莱恩瑞斯科技有限公司

Shenzhen Lionaces Technology Co., Ltd.

深圳市莱恩瑞斯科技有限公司 报告专用章

The result shown in this test report refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com

Shenzhen Lionaces Technology Co., Ltd.

Add: Room 101, No.38, South Ring Road, Ma'anshan Industrial Zone, Ma'anshan Community, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Website:www.lionaces.com E-mail:service@lionaces.com
Tel:(86-755)-28280690

材料安全技术说明书
Material Safety Data Sheet

依据 GB/T16483-2008&ISO11014:2009 编制
According to GB/T16483-2008&ISO11014:2009

第一部分 化学品及企业标识
Section 1 - Chemical Product and Company Identification

化学品信息 Chemical product information			
样品名称 Sample Name	铁锂电池 LiFePO4 Battery		
型号与规格 Model and specification	TSBAT12-100L-WT 12.8V, 100Ah, 1280Wh		
产品推荐及限制用途 Sample Uses	N/A		
单位信息 Company information			
实验室 Laboratory	深圳市莱恩瑞斯科技有限公司 Shenzhen Lionaces Technology Co., Ltd.		
实验地址 Testing Address	广东省深圳市宝安区沙井街道马安山社区马安山工业区南环路 38 号 101 Room 101, No.38, South Ring Road, Ma'anshan Industrial Zone, Ma'anshan Community, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China		
委托单位 Applicant	Tycon Systems, Inc		
委托单位地址 Applicant address	Parsons, Scott of 930 W 14600 S Ste 600, Bluffdale, UT 84065		
生产单位 Factory	深圳市零度峰回科技有限公司 Shenzhen Lindu Wincos Technology Co., Ltd		
生产单位地址 Factory address	深圳市宝安区新安街道大浪社区新安三路一巷 53 号金富来大厦 B 座 204-205 Room 204-205, Block B, Jinfulei Building, Xin'an 3rd Road, Bao'an District, Shenzhen, China.		
应急电话 Emergency telephone	13244875622		
备注 Remark	V1.0		
收样日期 Receiving Date	2026-07-09	完成日期 Completing Date	2026-07-23
主检人： Prepared by		审核人： Checked by		批准人： Approved by	

The result shown in this test report refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com

第二部分 危险性概述
Section 2 - Hazards Identification

紧急情况概述：无相关详细资料。
Emergency overview：No information available.
GHS 危险性分类：根据化学品全球统一分类与标签制度(GHS)的规定，不是危险物质。
Classification according to GHS：Not a dangerous substance according to GHS.

GHS 标签要素 Label elements	
危害类型象形图 Hazard pictogram(s)	无数据 No data available
警示词 Signal word	无数据 No data available
危险性说明 Hazard statement(s)	无数据 No data available
防范说明 Precautionary statement(s)	
预防措施 Prevention	无数据 No data available
事故响应 Response	无数据 No data available
安全储存 Safe storage	无数据 No data available
废弃处置 Disposal	无数据 No data available

物理和化学危险：无相关详细资料。
Physical and chemical risk: No information available.
健康危害：无相关详细资料。
Health hazard: No information available.
环境危害：无相关详细资料。
Environmental hazards: No information available.
其它危害：无相关详细资料。
Other hazards: No information available.

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

该物质或混合物的分类：☐物质 ☒混合物
Classification of the substance or mixture: ☐substance ☒mixture

The result shown in this test report refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com

化学名称 Chemical Composition	CAS No.	百分含量 Weight（%）
磷酸铁锂 Phosphoric acid, iron(2+) lithiumsalt (1:1:1)	15365-14-7	25.85
石墨 Graphite	7782-42-5	11.27
铜 Copper	7440-50-8	9.11
聚乙烯 Polyethylene	9002-88-4	0.02
不锈钢 Stainless steel	12597-68-1	20.02
聚氯乙烯 PvC(Chloroethylene, polymer)	9002-86-2	0.54
铝 AL	7440-31-5	9.00
六氟磷酸锂 Phosphate(1-), hexafluoro-,lithium	21324-40-3	10.2
碳酸丙烯酯 Propylene carbonate	108-32-7	3.5
碳酸二甲酯 Dimelene carbonate	616-38-6	11.0

注Note：CAS：化学文摘社Chemical Abstracts Service (Division of the American Chemical Society).
"N/A"：无数据No Data

第四部分 急救措施
Section 4 - First Aid Measures

总说明：正常情况下，不需要特别的措施。
General information: No special measures required.
吸入：立即将人员移至通风处，如果呼吸困难，速进行人工呼吸抢救。如症状持续，速就医。
After inhalation: Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.
皮肤接触：脱去污着衣物，用大量的水清洗，然后清洗双手，衣物清洗后再使用。如果症状持续，速就医。
After skin contact: Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.
眼睛接触：张开眼睛在流水下冲洗数分钟，如果症状仍然持续，请咨询医生。
After eye contact: Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.
食入：禁止催吐，速就医。
After swallowing: Do not induce vomiting. Get medical attention.
急性和迟发效应
Acute and delayed effects
主要症状：无相关详细资料。

The result shown in this test report refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com

The main symptoms: No relevant details information.
健康影响：无相关详细资料。
Health effects: No relevant details information.
对保护施救者的忠告：无相关详细资料。
To protect the rescuers advice: No relevant details information.
对医生的建议：需要及时的医疗处理及特别处理的症状，无相关详细资料。
To the doctor's advice: Need timely medical treatment and special symptoms, no relevant details information.

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

灭火剂：使用适合当地情况和周围环境的灭火剂，如干粉，CO_2。
Suitable extinguishing agents: Use extinguishing agent suitable for local conditions and the surrounding environment . Such as dry powder , CO_2.
特别危险性：在起火条件下，电池可能会破裂，释放出有害的分解产物。在经受高温(> 150℃(302℉))时，含有易燃电解液的电池，可能泄漏，点燃，产生火花，当损坏或滥用(如机械损伤或过度充电)时，可能燃烧迅速与耀斑燃烧效果，也可能引燃其他在电池附近衣服。
Special hazards arising from the substance or mixture: Battery may burst and release hazardous decomposition products when exposed to a fire situation. Battery contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature(>150℃(302℉)), when damaged or abused (e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.
灭火方法注意事项及防护措施：如起火，佩戴自主呼吸机和防护服。
Attention extinguishing method and protective measures: Wear self-contained respirator. Wear fully protective impervious suit.

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

作业人员防护措施、防护装备和应急处置程序：穿上保护装备，疏散人群，确保有足够的通风。
Homework personnel protective measures, protective equipment and emergency disposal procedures: Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation
环境保护措施：若无政府许可，勿将材料排入周围环境。
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
泄漏化学品的收容、清除方法及所使用的处置材料：从泄露区移除所有的火源，隔离人员。用一个不产生粉尘的方法打扫处理泄漏物，尽可能多地收集泄漏处理物于有标签的合适的容器中。泄露处理物禁止倒入下水道，沟渠或水源。所有废弃物必须参照联合国，国家，地方性法规进行处置。
Steps to be taken in case material is spilled or released and Waste disposal method: Remove ignition sources, evacuate area. Sweep up using a method that does not generate dust. Collect as much of the spilled material as possible, placed the spilled material into a suitable disposal container. Keep spilled material out of sewers, ditches and bodies of water. All waste must refer to the United Nations, the national and local regulations for disposal.
防止次生灾害的预防措施：有关安全处理的资料请参阅第七部分。有关个人保护装备的资料请参阅第八部分。有关弃置的资料请参阅第十三部分。

The result shown in this test peport refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com

Shenzhen Lionaces Technology Co., Ltd.
Add: Room 101, No.38, South Ring Road, Ma'anshan Industrial Zone, Ma'anshan Community, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Website:www.lionaces.com E-mail:service@lionaces.com
Tel:(86-755)-28280690

To prevent the secondary disasters prevention measures: See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

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

操作注意事项：储存时远离食物和水源。吃饭喝水前彻底清洗双手。储有化学物的容器搬用时需防止静电的产生和积聚。
Precautions for safe handling: Consumption of food and beverage should be avoided in work areas. Wash hands with soap and water before eating, drinking. Ground containers when transferring liquid to prevent static accumulation and discharge.
有关火灾及防止爆炸的资料：电池在拆开、挤压、遇火或高温情况下，会引起起火或爆炸，严禁短路或非正确操作。
Information about fire and explosion protection: Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.
储存注意事项：储存在一个低温，干燥，通风良好的环境。远离热源，避免长时间阳光照射。未使用时密封容器。
Conditions for safe storage, including any incompatibilities: Requirements to be met by storerooms and receptacles. Store in a cool, dry, well-ventilated place. Keep away from heat, avoiding the long time of sunlight.

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

职业接触限值：无相关详细资料。
Occupational exposure limit: no relevant details information.
生物限值：无相关详细资料。
Biological limit: no relevant details information.
检测方法：无相关详细资料。
Detection: no relevant details information.
工程控制
Engineering control
一般保护和卫生措施：当处理化学物品时，应遵循一般的预防措施。远离食物和水源。立即脱掉所有脏衣服或被污染的衣物。在休息之前和工作结束之后洗手。
General protective and hygienic measures:The usual precautionary measures for handling chemicals should be followed.Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work.
呼吸防护：高浓度的情况时，使用适当的呼吸器。
Respiratory Protection: Use suitable respirator when high concentrations are present.
个体防护设备Personal Protection

手防护 Hand protection	眼睛防护 Eye protection

The result shown in this test report refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com


Protective gloves


Tightly sealed goggles

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

外观：黑色
Appearance: Black
形状：近长方体
Form: Approximate cuboid
气味：泄漏时，有刺激性气味。
Odour: If leaking, smells of medical ether
酸碱度：不适用
pH: Not applicable as supplied.
闪点：针对单个组分暴露情况，其他不适用。
Flash Point: Not applicable unless individual components exposed.
易燃度：针对单个组分暴露情况，其他不适用。
Flammability: 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。
Relative density: 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 (water): 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
Solubility (other): Not applicable unless individual components exposed.

第十部分 稳定性和反应活性
Section 10 - Stability and Reactivity

稳定性：正常情况下稳定。
Chemical stability：Stable in normal circumstances.
危险反应：无资料。
Possibility of hazardous reactions：Data not available.
应避免条件：火焰，火花和其他热源，禁忌物。
Conditions to Avoid: Flames, sparks, and other sources of ignition, incompatible materials.
禁配物：氧化剂，酸，碱。
Incompatibilities: Oxidizing agents, acid, base.
危险的分解产物：二氧化碳，一氧化碳。
Hazardous Combustible Products: Carbon monoxide, carbon dioxide, lithium oxide fumes.

第十一部分 毒理学资料
Section 11 - Toxicological Information

对毒理学影响的信息

The result shown in this test report refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com

Information on toxicological effects
急性毒性LC50/LD50：无相关详细资料。
Acute toxicity LD/LC50 Values relevant for classification: Not available.
注：LC50：半数致死浓度（lethal concentration, 50 percent kill）
LD50：半数致死剂量（lethal dose, 50 percent kill）
皮肤刺激/腐蚀：无相关详细资料。
Skin irritation/corrosion: No further relevant information available.
眼睛刺激/腐蚀：无相关详细资料。
Eyes stimulus/corrosion: No further relevant information available.
呼吸或皮肤过敏：无相关详细资料。
Breathing or skin irritation: No further relevant information available.
生殖细胞突变性：无相关详细资料。
Germ cell respectively: No further relevant information available.
致癌性：无相关详细资料。
Carcinogenicity: No further relevant information available.
生殖毒性：无相关详细资料。
Reproductive toxicity: No relevant details information.
特异性靶器官系统毒性——一次性接触：无相关详细资料。
Specific target organ system toxicity disposable contact: No further relevant information available.
特异性靶器官系统毒性——反复接触：无相关详细资料。
Specific target organ system toxicity, repeated contact: No further relevant information available.
吸入危害：无相关详细资料。
Inhalation hazard: No further relevant information available.
潜在的有害效应：无相关详细资料。
Potentially harmful effects: No further relevant information available.

第十二部分 生态学资料
Section 12 - Ecological Information

生态毒性
Ecological toxicity
水生毒性：无相关详细资料。
Aquatic toxicity: No further relevant information available.
持久性和降解性：无相关详细资料。
Persistence and degradability: No further relevant information available.
环境系统习性
Behaviour in environmental systems
潜在的生物累积性：无相关详细资料。
Bioaccumulative potential: No further relevant information available.
土壤内移动性：无相关详细资料。
Mobility in soil: No further relevant information available.
生态学资料
Ecological effects
额外的生态学资料：无相关详细资料。
Additional ecological information :No further relevant information available.
总括注解：若无政府许可，勿将材料排入周围环境。
General notes:Do not allow material to be released to the environment without proper governmental permits.

The result shown in this test report refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com

其他副作用：无相关详细资料。
Other adverse effects: No further relevant information available.

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

废弃处置方法建议：请参考国家和地方的相关法规正确进行处理。
Waste treatment methods and Recommendation: Consult state, local or national regulations to ensure proper disposal.
受污染的容器和包装建议：必须根据官方的规章来丢弃。
Uncleaned packaging and Recommendation: Disposal must be made according to official regulations.

第十四部分 运输信息
Section 14 - Transport Information

运输标签：锂电池和钠离子电池第九类危险品标签，或仅限货机标签
Label for conveyance: Lithium Battery or Sodium Ion Battery Class 9 Label, or Cargo Aircraft only
UN 编号：3480 & 3481
UN Number: 3480 & 3481
包装等级：II
Packaging Group: II
海洋污染物：无
Marine pollutant: No
正确的装运名称：锂离子电池(包括锂聚合物电池)，或锂离子电池与设备包装在一起，或锂离子电池安装在设备中
Proper Shipping name: Lithium Ion Batteries(Including Lithium Polymer Batteries), Lithium Ion Battery Packed With Equipment, Lithium Ion Battery Contained In Equipment
运输信息：锂电池已通过联合国《试验和标准手册》第Ⅲ部分 38.3 小节相应测试要求，（报告编号：LA2026B1899001U）。
根据民用航空组织(ICAO)，TI 或国际航空运输协会(IATA)，DGR 67 版（2026 版）包装说明 PI 965 第 IA 节或 PI 966~967 第 I 节的指令可以运输。货物运输遵守 IMDG CODE (Amdt. 42-24) 的要求，该货物属于危险品。
Transport information: Lithium battery is of a type proved to meet the Requirements of each test in the UN Manual of Tests And Criteria, Part Ⅲ, sub-section 38.3. (Report No. : LA2026B1899001U)
According to the International Civil Aviation Organization (ICAO), TI, or International Air Transport Association (IATA), the Dangerous Goods regulations 67th (2026 Edition) packaging instructions (PI 965 Section IA, PI 966-967 Section I) may be used for transportation. The goods are complied with the requirements of IMDG CODE (Amdt. 42-24) , The goods to be transport as Dangerous Good.
运输方式：空运，海运，铁路，公路
Transport Fashion: By air, by sea, by railway, by road.

The result shown in this test report refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com

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

法律信息
Law information
《危险物品规则》
《Dangerous Goods Regulations》
《对危险货物运输的有关规定的建议》
《Recommendations on the Transport of Dangerous Goods Model Regulations》
《国际海运危险货物规则》
《International Maritime Dangerous Goods》
《危险品安全运输技术指令》
《Technical Instructions for the Safe Transport of Dangerous Goods》
《危险货物分类和品名编号》
《Classification and code of dangerous goods》
《职业安全卫生法》
《Occupational Safety and Health Act》(OSHA)
《有毒物质控制法》
《Toxic Substance Control Act》(TSCA)
《消费产品安全法》
《Consumer Product Safety Act》(CPSA)
《联邦环境污染控制法》
《Federal Environmental Pollution Control Act》(FEPCA)
《石油污染法案》
《The Oil Pollution Act》(OPA)
《超级基金修正案和再授权法案III(302/311/312/313)》
《Superfund Amendments and Reauthorization Act TitleIII（302/311/312/313)》(SARA)
《资源保护及恢复法案》
《Resource Conservation and Recovery Act》(RCRA)
《安全饮用水法》
《Safety Drinking Water Act》(CWA)
《加州 65 提案》
《California Proposition 65》
《美国联邦法规》
《Code of Federal Regulations》(CFR)
《全球化学品统一分类和标签制度》
《Globally Harmonized System of Classification and Labelling of Chemicals》 (GHS)
In accordance with all Federal, State and local laws
根据所有联邦、州和地方法律。
此MSDS符合法规（EU) No 2020/878 ;
（EC）No 1907/2006，Article 31，附件II;
GB/T 17519-2013《化学品安全技术说明书编写指南》。
This Material Safety Data Sheet complies with the requirements of Regulation (EU) No 2020/878;
(EC) No 1907/2006，Article 31，appendix II;
GB/T 17519-2013, Guidance on the compilation of safety data sheet for chemical products.

The result shown in this test report refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com

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

注意 Declare to reader：

上述信息是基于现有的数据信息，在实际应用过程中可能出现其他未预料的情况，其相应信息可能需要修改，我方不承担此项责任。在操作中请根据实际情况作出相应的正确的处置。

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

The result shown in this test report refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com

声　明
Statement

1、本报告无本单位报告专用章和批准人签章无效。

This report is invalid without the special seal for report of Lionaces and the signatures of approver.

2、本报告涂改和删除无效。

This report is invalid if it is blotted out and deleted.

3、委托单位对检测结果有异议，应于收到报告之日起十五日内向我司提出。

If the applicant has any questions about results, shall submit to Lionaces within 15 days.

4、本报告仅对客户所送样品负责。

This report is responsible for the sample provided by the client only.

5、未经本单位许可，不得部分复制、摘用本报告书内容。

This report shall not be reproduced except in full,or extracted,without the written approval of Lionaces.

6、委托单位必须如实提供样品和资料，有关报告中的产品信息、参数、图纸、关键元器件清单等所有产品信息均由委托单位提供，否则本单位不承担任何相关责任。

The applicant must provide samples and materials truthfully. All of information such as product information, parameters, drawings, components, etc. are provided by the applicant. Otherwise we will not take on any relevant responsibilities for this report.

----报告结束----
----End of report----

The result shown in this test report refer only to the samples(s) tested by unless otherwise stated and the sample(s)are retained for 30 days only.The document is issued Lionaces,it cannot be reproduced except in full with our prior written be permission. The document is abailable on request and the brief information for its validation can Assessable and confirmed or the website, http://www.lionaces.com

Shenzhen Lionaces Technology Co., Ltd.
Add: Room 101, No.38, South Ring Road, Ma'anshan Industrial Zone, Ma'anshan Community, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Website:www.lionaces.com　E-mail:service@lionaces.com
Tel:(86-755)-28280690