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Report No.: DGLL20181207MSDS01

MATERIAL SAFETY DATA SHEET

材料安全数据表

Product Name 产品名	Rechargeable Li-ion Battery 可充电锂离子电池
Type/ Model 型号规格	SZLZDZ-38405F-01 38.4V 5Ah 192Wh
Revision Date 修订日期	Dec.07, 2018
Effective Date 起效日期	Jan.01, 2019
Compiler 编写	Huang Yining
Reviewer 审核	Tang Mingcao
Approver 批准	Xu Hongbin

广州邦禾检测技术有限公司

Guangzhou MCM Certification and Testing Co., Ltd.



Material Safety Data Sheet

材料安全数据表

SECTION 1 - CHEMICAL AND COMPANY IDENTIFICATION

第 1 节-化学和公司信息

Name of Sample/产品名: Rechargeable Li-ion Battery 可充电锂离子电池	Type/型号: SZLZDZ-38405F-01 38.4V 5Ah 192Wh
Company/公司: Dongguan Power Long Battery Technology Co., Ltd. 东莞力朗电池科技有限公司	Address/地址: No.401,Technology Road, Qingxi Town, Dongguan, Guangdong, China. 广东省东莞市清溪镇科技路 401 号
Zip code/邮政编码: -	Fax/传真: -
E-mail/电子邮箱: xyq@plb.com.cn	Emergency Telephone/应急电话: 0769-39016600

SECTION2 – HAZARDS IDENTIFICATION

第 2 节-危害识别

Hazards Identification/危害识别:

The battery has passed the test items of UNITED NATIONS “Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria” ST/SG/AC.10/11/Rev.6, amend1, section 38.3; Report No.: DGLL20180809U01; The sealed Battery is not hazardous in normal use.
电池符合联合国《关于危险品货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/Rev.6,amend1,section 38.3 的要求, 报告号为 DGLL20180809U01。完好电池在正常使用下不存在危险性。

Emergency Overview/紧急情况概述:

Caution: Avoid contact and inhalation the electrolyte contained inside the battery.
注意: 避免接触和吸入电池内部材料

SECTION3 – COMPOSITION/INFORMATION ON INGREDIENT

第 3 节-成分信息

Ingredient/成分	Molecular formula/化学式	CAS No./ CAS 号	Weigh/含量
Lithium Iron Phosphate 磷酸亚铁锂	LiFePO ₄	15365-14-7	29.87%
Acetylene Black 乙炔黑	C	1333-86-4	0.92%
Polyvinylidene Fluoride 聚偏二氟乙烯	(C ₂ H ₂ F ₂) _n	24937-79-9	0.95%
Graphite 石墨	C ₂₄ X ₁₂	7782-42-5	13.92%
Styrene Butadiene Rubber 丁苯橡胶	C ₃₆ H ₄₂ X ₂	9003-55-8	0.60%
Carboxymethyl Cellulose 羧甲基纤维素	C ₆ H ₇ O ₂ (OH) ₂ CH ₂ COONa	9004-32-4	0.19%
Aluminium 铝	Al	7429-90-5	4.30%

Copper 铜	Cu	7440-50-8	9.43%
Polypropylene 聚丙烯	(C ₃ H ₆) _n	9003-07-0	2.70%
Ethylene Carbonate 碳酸亚乙酯	C ₃ H ₄ O ₃	96-49-1	4.03%
Dimethyl Carbonate 碳酸二甲酯	C ₃ H ₆ O ₃	616-38-6	6.72%
Ethyl Methyl Carbonate 碳酸甲乙酯	C ₄ H ₈ O ₃	623-53-0	2.69%
Lithium Hexafluorophosphate 六氟磷酸锂	LiPF ₆	21324-40-3	1.92%
Stainless Steel, Powder, -150 Mesh 不锈钢粉末, 150 目	---	12597-68-1	18.14%
Poly(Ethylene Terephthalate) 聚对苯二甲酸乙二醇酯	C ₁₀ H ₁₂ O ₆	25038-59-9	3.49%
Other 其他	---	---	0.15%

SECTION 4 – FIRST AID MEASURES**第 4 节-急救措施****Eye Exposure/眼睛接触:**

In case of contact with eyes, flush with copious of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

如果接触眼睛, 分开眼睑用大量的水冲洗至少 15 分钟, 如有不适感, 立即就医。

Skin Exposure/皮肤接触:

If the internal battery materials of an opened battery cell some into contact with skin, immediately flush with plenty of water.

如果接触皮肤, 立即用大量水和肥皂清洗至少 15 分钟, 如有皮肤刺激或过敏反应, 立即就医。

Inhalation Exposure/呼吸摄入:

If inhaled the internals of battery vomiting. Seeking Immediate medical attention.

如果吸入, 迅速脱离现场至空气新鲜处, 立即就医。

Ingestion Exposure/吞咽摄入:

If swallowed, do not induce vomiting. Seek immediate medical attention.

如果吞下, 禁止催吐。立即就医。

SECTION 5 – FIRE FIGHTING MEASURES**第 5 节-消防措施****Danger characteristic/危险特征:**

Exposure to excessive heat can cause venting of the liquid electrolyte. Battery may burst and release hazardous decomposition products when exposed to a fire situation.

暴露在过热环境下会导致电解液的泄漏。电池在火灾环境中暴露可能破裂并释放危险分解物质。

Hazardous combustion products/有害燃烧产物:

Corrosive gas may be emitted during fire.

可能会发出腐蚀性气体

Fire-Fighting method& media/消防方法与介质:

The stuff must equip with filtermask (full mask) or isolated breathing apparatus. The stuff must wear the clothes which can defense the fire in the upwind direction. Remove the container to the open space as soon as possible. Spray water on the containers in the fireplace to keep them cool until finish extinguishment.

穿戴自给式呼吸器和完整的防护装备, 将容器搬离火灾区域, 向容器壁喷水以到达冷却的目的, 直到完全灭火。

Media: plenty of water, dry chemical powder or carbon dioxide.

消防介质：大量的水，或干粉，或二氧化碳

SECTION 6 – ACCIDENTAL RELEASE MEASURES

第 6 节—意外释放措施

Emergency treatment/急症处理:

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the batteries 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 waste.

如果电池内部材料泄漏，试验人员应立即撤离试验区域直到烟气消散。将通风设备打开吹散危险性气体。用抹布擦净试验区域，清除溢出的液体，将泄漏电池放进塑料袋中，然后放进钢制容器中。避免皮肤和眼睛接触或吸入有害气体。

SECTION 7 – HANDLING AND STORAGE

第 7 节—处理与存储

Handling/处理:

1. Do not allow battery terminations to contact each other, or contact with other metals.
电池与电池之间的端子不能接触，或接触其他金属
2. Do not put the cell or battery into a fire or heat it. Do not solder the cell directly. Do not use or leave the cell or battery in a place near fire or heaters.
电池或电芯不能加热；电池不能直接焊接在一起；电池或电芯不能靠近火源或加热器。
3. Do not expose the battery to excessive physical shock or vibration.
电池不能暴露在极端的物理冲击或振动下。
4. Do not immerse, throw, and wet a battery in water.
电池不能浸泡，放置在水中或放置在潮湿的环境下。
5. Short-circuiting should be avoided. Short circuit will reduce the life of the battery and can lead to ignition of surrounding materials. Physical contact with short-circuited battery can cause skin burn.
电池应避免短路；短路会减少电池的寿命和导致电池周围的材料燃烧。
6. The batteries should not be opened, destroyed or incinerated, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.
电池不能拆开、破坏、焚化，因为会导致电池泄露、破裂或电池密闭容器内的原料释放到环境中。
7. Place the cell beyond the child packing and container.
密封保存，远离儿童。
8. Do not connect the battery directly to an electric outlet or cigarette socket in a car.
电池不能直接连接电源插座，不能连接车载点烟插座。
9. Be sure to use the specified charger for battery, and follow the charging instructions correctly.
电池必须使用规定的充电器并按照指引的充电方式进行充电。
10. Do not mix old and new batteries together, neither with Ni-Cd, dry batteries or another manufacturer batteries or product.
新旧电池不能一起放置，包括镍镉电池、干电池和其他制造商所生产的电池。

Storage/储存:

1. Batteries should be separated from other materials and stored in a noncombustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks.
电池应该与其他材料分开，储存在一个不可燃的，通风良好的，防喷器保护的结构中，在墙壁和电池堆之间有足够间隙。
2. Keep the sample in the cool, dry and well-ventilated place (temperature: -20~30 degree C humidity: 45~85%). Do not exposure to direct sunlight for long periods. Keep away from fire and heating sources. Don't keep the samples with oxidizer and acid.
将样品保存在阴凉、干燥、通风良好的地方(温度:零下 20 度, 湿度:45-85%)。不要长时间暴露在阳光下。远离火源和热源。不要用氧化剂和酸来保存样品。
3. Charge the battery every 6 months to the amount specified by the manufacture, even if the battery is not used.
电池每 6 个月充电一次，即使电池没有使用。
4. Equip with relevant types and quantities of the extinguishment instruments. The storage place should be equipped with suitable shelter materials for divulgence handling.
配备有相应型号和数量的灭火设备。存放处应配备适当的避难材料，以供泄露处理。

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**第 8 节-接触控制、人身保护****Engineering Control/工程控制:**

Keep away from heat and open flame. Supply with sufficient partial air exhaust. Store in a cool, dry place.
不要靠近热源和明火。保持良好的通风排气。储存在阴凉干燥的地方。

Respiratory Protection/呼吸防护:

Not necessary under conditions of normal use. Wear self-contained breathing filtermask if the density exceed in the air. Wear breathing apparatus under the condition of emergency rescue or evacuation.

在正常使用的情况下是不必要的。如果气体浓度超过在限值需佩戴自给式呼吸过滤器面具。在紧急救援和疏散的情况下需佩戴呼吸器。

Eyes Protection/眼睛防护:

Not necessary under conditions of normal use. Wear protective glasses if handling a leaking or ruptured battery.
在正常使用的情况下是不必要的。如果处理泄漏或破裂的电池需戴防护眼镜。

Skin and Body Protection/皮肤和身体保护:

Not necessary under conditions of normal use. Wear fireproofing, gas defense clothes in case of handling a leaking or ruptured battery.

正常使用的情况下是不必要的。如果处理泄漏或破裂的电池需穿防火、防毒的衣服。

Hands Protection/手部防护:

Not necessary under conditions of normal use. Wear chemical resistant rubber.

正常使用的情况下是不必要的。戴耐橡胶手套。

Other Protections/其他防护:

No smoking, dining and drinking water in the workplace. Keep good habit of hygiene.

在工作场所禁止吸烟、饮食。保持良好的卫生习惯。

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**第 9 节-物理和化学性质****Appearance/外观:**

Black/黑色

Physical state/状态:

Solid/固体

Form/形状:

Prismatic/棱柱形

Odor/气味:

Odorless/无味

Solubility/溶解性:

Insoluble in water/不溶于水

SECTION 10 – STABILITY AND REACTIVITY**第 10 节-稳定性与反应性****Stability/稳定性:**

Stable under normal temperature and pressure.

在正常温度和压力下是稳定的。

Distribution of Ban/禁配物:

Strong oxidizer, strong acid and corrosives

避免与强氧化剂、强酸和腐蚀性介质接触。

Conditions to Avoid/应避免的状态:

Fire source, heating source, disassemble, external short circuit, crushes, deformation, high temperature above 100°C, direct sunlight and high humidity, immerse in water or overcharge.

火源、热源、拆卸、外部短路、挤压、变形、100°C以上的高温、阳光直射、潮湿环境、浸泡在水中、过放电。

Hazardous Polymerization/存在危险的聚合:

Will not occur.

不存在

Hazardous Decomposition Products/危险的分解产物:

Metal oxides, CO, CO₂

金属氧化物、一氧化碳、二氧化碳

SECTION 11 – TOXICOLOGICAL INFORMATION**第 11 节-毒理学信息****Acute Toxicity/急性毒性:**

No information is available.

没有可用的信息。

Sub-acute and Chronic Toxicity/亚急性和慢性毒性:

No information is available.

没有可用的信息。。

Irritation Data/刺激性:

The internal battery materials may cause irritation to eyes and skin.

内部电池材料可能会引起眼睛和皮肤的刺激。

Sensitization/致敏性:

The liquid in the battery may cause sensitization to some person.

电池中的液体可能会引起某些人的敏感。

Mutagenicity/诱变性:

No information is available.

没有可用的信息。

Carcinogenicity/致癌性:

Cobalt and Cobalt compounds are considered to be possible human carcinogen(s).

钴及其化合物有致癌的风险。

Others/其他:

Since the materials in this battery are sealed in the can, the potential for exposure to the components of the battery is negligible, when the battery is used as directed. However technical or electrical abuse of the battery may result in the release of battery contents.

由于材料密封于电池内, 潜在的接触电池的组件可以忽略不计, 作为电池的指导。滥用电池可能导致释放电池。

SECTION 12 – ECOLOGICAL INFORMATION**第 12 节-生态学信息****Eco-toxicity/生态毒性:**

No data available.

没有可用的信息。

Biodegradable/生物降解能力:

No data available.

没有可用的信息。

Mobility in soil/土壤中的迁移性:

No data available.

没有可用的信息。

Bioconcentration or biological accumulation/生物浓缩或生物积累:

No data available.

没有可用的信息。

Other harmful effects/其他有害影响:

Don't abandon the battery into environment, may cause water or soil pollution.

不要将电池丢弃到环境中, 可能会造成水或土壤的污染。

SECTION 13 - DISPOSAL CONSIDERATIONS**第 13 节-处置注意事项****Appropriate Method of Substance/合适的处置方法:**

The battery should be completely discharged prior to disposal in order to prevent short circuit.

电池应该完全放电处理,以防止短路。

The battery contains recyclable materials. It is suggested recycle. Refer to National or Local regulations before handling. Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in National or Local regulations of hazardous waste treatment and hazardous waste transportation.

对于电池可回收的材料,按国家或当地法规处理,建议回收。电池应由许可的专业公司处理。按国家或地方法规进行垃圾处理和危险废物运输。

SECTION 14 – TRANSPORT INFORMATION(Ni-HM)**第 14 节-运输信息**

Note/注意:	<p>Lithium batteries is classified to Lithium ion batteries (including lithium ion polymer batteries) and Lithium metal batteries (including lithium alloy batteries).</p> <p>Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "PI965-970 section II of IATA-DGR" or "special provision 188 of IMO-IMDG Code".</p> <p>锂电池分类成锂离子电池(包括锂离子聚合物电池)和锂金属电池(包括锂合金电池)。锂电池以“锂电池”、“锂电池与设备一起包装”或“锂电池安装在设备中”形式出货,当满足 IATA-DGR 中 PI965-970 第 II 部分或 IMO-IMDG Code 中特殊条款 188,将不视为危险品。</p>
IATA:	<p>Proper Shipping Name: Lithium ion batteries</p> <p>运输专用名: 锂离子电池</p>
	<p>UN Number: UN3480</p> <p>UN 编号: UN3480</p>
	<p>Hazard Class: 9</p> <p>危害等级: 9</p>
	<p>Packing Instructions: According to IATA DGR 60th Edition (Effective 1 January-31December 2019), PACKING INSTRUCTION 965 of section IA for transportation.</p> <p>包装要求: 根据 IATA DGR 第 60 版(有效期从 2019 年 1 月 1 日至 2019 年 12 月 31 日),运输时,货物需要按照包装要求 965 第 IA 部分进行办理。</p>
	<p>Proper Shipping Name: Lithium ion batteries contained in equipment</p> <p>运输专用名: 锂离子电池安装在设备中</p>
	<p>UN Number: UN3481</p> <p>UN 编号: UN3481</p>
	<p>Hazard Class: 9</p> <p>危害等级: 9</p>
	<p>Packing Instructions: According to IATA DGR 60th Edition (Effective 1 January-31December 2019), PACKING INSTRUCTION 967 of section I for transportation.</p> <p>包装要求: 根据 IATA DGR 第 60 版(有效期从 2019 年 1 月 1 日至 2019 年 12 月 31 日),运输时,货物需要按照包装要求 967 第 I 部分进行办理。</p>
IMO:	<p>Proper Shipping Name: Lithium ion batteries</p> <p>运输专用名: 锂离子电池</p>
	<p>UN Number: UN3480</p> <p>UN 编号: UN3480</p>
	<p>Hazard Class: 9</p> <p>危害等级: 9</p>
	<p>Packing Group: II</p> <p>包装等级: II</p>
	<p>The goods are restricted to IMO IMDG Code (Amend 38-2016) according to special provision 903.</p> <p>根据 IMO IMDG Code (Amend 38-2016), 货物需根据特殊条款 903 进行办理</p>

Proper Shipping Name: Lithium ion batteries contained in equipment 运输专用名: 锂离子电池安装在设备中
UN Number: UN3481 UN 编号: UN3481
Hazard Class: 9 危害等级: 9
Packing Group: Not restricted 包装等级: 不受限制
The goods are restricted to IMO IMDG Code (Amend 38-2016) according to special provision 903. 根据 IMO IMDG Code (Amend 38-2016), 货物需根据特殊条款 903 进行处理

SECTION 15 – REGULATORY INFORMATION**第 15 节-相关法律法规**

《Dangerous Goods Regulation》(DGR)
《Recommendations on the Transport of Dangerous Goods Model Regulations》
《International Maritime Dangerous Goods》(IMDG)
《Occupational Safety and Health Act》(OSHA)
《Toxic Substances Control Act》(TSCA)
《Code of Federal Regulations》(CFR)
《Technical Instructions for the Safe Transport of Dangerous Goods》
《California Proposition 65》
《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》(SARA)
In accordance with all Federal, State and local laws.

SECTION 16 – ADDITIONAL INFORMATION**第 16 节-额外信息****Accordinging standard:**

GB/T 16483-2008 Safety data sheet for chemical products Content and order of sections
ISO 11014:2009(E) Safety data sheet for chemical products – Content and order of sections

Date:

2018-12-07

Department:

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Other Information:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty express or implied, With respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damage of any third party or for lost profits or any special, indirect, consequential or exemplary damages arising from using the above information.

上述信息被认为是正确的, 但并不是所有的内容都具有包容性, 只能作为指南使用。对于这些信息, 我们不提供任何担保或其他保证明示或默示的保证, 我们不承担由此产生的任何责任。用户应自行调查, 以确定其特定用途的信息是否合适。我们绝不要对任何第三方的索赔、损失或损害承担任何责任, 也不应对使用任何特殊的、间接的、间接的或典型的损害赔偿负责。

Sample Reference Photo

Model: SZLZDZ-38405F-01 38.4V 5Ah 192Wh

