

MATERIAL SAFETY DATA SHEET

材料安全数据表

Lithium Ion Rechargeable Battery

二次锂离子电池组

Model: BSX300-170-3.87

型号: BSX300-170-3.87

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Material Safety Data Sheet

材料安全数据表

Section 1 - Chemical Product and Company Identification

第 1 节 - 化学品及企业标识

Product Identification 产品标识

Product 产品: Lithium Ion Rechargeable Battery 二次锂离子电池组
Model No.型号: BSX300-170-3.87
Rated Capacity 额定容量: 170mAh (0.658Wh)
Nominal Voltage 标称电压: 3.87V
Revision Date 修订日期: 2024-06-13
Expiry date 有效期: 2024-12-31

Manufacturer 生产供应商

Company name 公司名称: Guangdong Highpower New Energy Technology Co.,Ltd
广东省豪鹏新能源科技有限公司
Address 地址: No. 38, Songbailing Avenue, Start-up Area, China-Korea (Huizhou) Industrial
Park, Zhongkai Hi-tech Industrial Development Zone, Huizhou City,
Guangdong, China
惠州仲恺高新区中韩产业园起步区松柏岭大道 38 号
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Section 2 - Hazards Identification

第 2 节 - 危险识别

Preparation hazards and classification 制备危害和分类	Not dangerous with normal use. Do not dismantle, open or shred the Lithium Ion Rechargeable Battery. Exposure to the ingredients contained within or their ingredients products could be harmful. 正常使用无危险。禁止拆解、打开或破坏锂离子电池。暴露于产品中包含的成分或其成分可能是有害的。
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Appearance, Color, and Odor 外观, 颜色和气味	Solid object with no odor, no color. 固体物质, 无色, 无味
Primary Route(s) of Exposure 主要泄露途径	These chemicals are contained in a sealed enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by Inhalation, Ingestion, Eye contact and Skin contact. 这些化学品装在密封的容器里, 只有当电池被机械、加热或电滥用到危及外壳的程度时, 才会出现暴露的风险。如果发生这种情况, 可通过吸入、摄入、眼睛接触和皮肤接触接触其所含的电解质溶液。
Potential Health Effects: 潜在健康危害:	ACUTE (short term): see Section 8 for exposure controls In the event that this battery has been ruptured, the electrolyte solution contained within the battery would be corrosive and can cause burns. Inhalation: Inhalation of materials from a sealed battery is not an expected route of exposure. Vapors or mists from a ruptured battery may cause respiratory irritation. Ingestion: Swallowing of materials from a sealed battery is not an expected route of exposure. Swallowing the contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. Skin: Contact between the battery and skin will not cause any harm. Skin contact with contents of an open battery can cause severe irritation or burns to the skin. Eye: Contact between the battery and the eye will not cause any harm. Eye contact with contents of an open battery can cause severe irritation or burns to the eye. CHRONIC (long term): see Section 11 for additional toxicological data 急性 (短期): 如果电池破裂, 电池内部具有腐蚀性的电解液会导致灼伤, 关于泄漏管控的措施, 请参阅第 8 节。 吸入: 正常情况下无法从密闭电池中吸入有害物质。电池破裂产生的蒸汽或雾可能会引起呼吸道刺激。 摄入: 正常情况下无法从密闭电池中摄入有害物质。吞下破损电池内的物质会导致严重的口腔、食道和胃肠道化学烧伤。 皮肤接触: 电池和皮肤间的接触不会造成危害。皮肤接触破损电池内的物质会造成严重的刺激或灼伤。 眼睛: 电池和眼睛间的接触不会造成危害。眼睛接触破损电池内的物质会造成严重的刺激或灼伤。 慢性 (长期): 有关其他有毒物质说明, 请参阅第 11 节。
Medical Conditions Aggravated by Exposure 医疗状况加剧泄漏	Not applicable 不适用
Reported as carcinogen 致癌物质报告	Not applicable 不适用

Section 3 - Composition/Information on Ingredients

第 3 节 - 成分/成分信息

Chemical Composition	Concentration or concentration range (%)	CAS No.
Lithium Cobalt Oxide 钴酸锂	35~38%	12190-79-3
Graphite 石墨	23~25%	7782-42-5
PVDF 聚偏氟乙烯	0.5~2%	24937-79-9
SBR 丁苯橡胶	0.01~0.05%	9003-55-8
Carboxymethylcellulose 羧甲基纤维素	0.1~0.3%	9000-11-7
Lithium Hexafluorophosphate 六氟磷酸锂	6~10%	21324-40-3
Aluminum 铝	5~10%	7429-90-5
Copper 铜	5~10%	7440-50-8
Nickel 镍	2~3%	7440-02-0
Polypropylene 聚丙烯	2~6%	9003-07-0
PET 聚对苯二甲酸乙二醇酯	0.01~1.05%	25038-59-9
Polyethylene 聚乙烯	2~5%	9002-88-4
Nylon 尼龙	2~5%	24937-16-4

Section 4 - First-aid Measures

第 4 节 - 急救措施

Inhalation 吸入	If contents of an opened battery are inhaled, remove source of contamination or move victim to fresh air. Obtain medical advice. 如果吸入打开电池内部的化学物质，要及时清理污染源或将人转移到空气新鲜处，并在医生的建议下治疗。
Skin contact 皮肤接触	If skin contact with contents of an open battery occurs, as quickly as possible remove contaminated clothing, shoes and leather goods. Immediately flush with lukewarm, gently flowing water for at least 30 minutes. If irritation or pain persists, seek medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard. 如果皮肤接触到打开电池内部的化学物质，请尽快清除受污染衣物、鞋子和皮革制品。立即用流动的温水轻轻冲洗至少 30 分钟。如果仍然感到刺激或疼痛，请立即就医。并在重新使用或丢弃之前，彻底清除受污染的衣物、鞋子和皮革制品。

<p>Eye contact 眼睛接触</p>	<p>If eye contact with contents of an open battery occurs, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes while holding the eyelids open. Neutral saline solution may be used as soon as it is available. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto face. Quickly transport victim to an emergency care facility.</p> <p>如果眼睛接触到打开电池内部的化学物质，请立即用流动的温水轻轻冲洗至少 30 分钟，并保持眼睛张开，使用中性盐水溶液更佳。必要时，在送往急救室治疗时继续保持冲洗。注意不要将受污染的水冲洗到未受伤的眼睛或脸部。需要立即将其送医治疗。</p>
<p>Ingestion 摄入</p>	<p>If ingestion of contents of an open battery occurs, never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 60 to 240 mL (2-8 oz.) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility.</p> <p>如果摄入打开电池内部的化学物质，受害人当即失去意识或产生抽搐，请勿用口过渡任何东西。用水彻底清洗受害人口腔。不要催吐，让受害人饮下 60~240mL (2~8 oz.) 的水。若受害人自动呕吐，则将其前倾，降低误吸风险。并再次用水清洗受害人口腔，并立即送医。</p>

Section 5 - Fire Fighting Measures

第 5 节 – 消防措施

<p>Flammable Properties 易燃性</p>	<p>In the event that this battery has been ruptured, the electrolyte solution contain within the battery would be flammable. Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.</p> <p>如果电池破裂，则电池内含有的电解液具有易燃性。与其他密闭容器一样，电池在过热条件下可能会发生爆炸，这可能导致易燃性或腐蚀性物质释放。</p>
<p>Suitable extinguishing Media 合适的灭火器</p>	<p>Use extinguishing media suitable for the materials that are burning. 使用适合扑灭燃烧材料的灭火器。</p>
<p>Unsuitable extinguishing Media 不当的灭火器</p>	<p>Not available 无法使用。</p>
<p>Explosion Data 爆炸数据</p>	<p>Sensitivity to Mechanical Impact: This may result in rupture in extreme cases Sensitivity to Static Discharge: Not Applicable 机械冲击的灵敏性：在极端情况下可能导致破裂 静放电的灵敏性：不适用</p>

Specific Hazards arising from the chemical 化学品的具体危害	Fires involving Lithium Ion Rechargeable Battery are controlled with water. When water is used, however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended to extinguish the fire. 二次锂离子电池组的火灾可以用水控制。然而，当水被使用时，可能会产生氢气。在密闭空间中，氢气能形成爆炸性混合物。在这种情况下，建议使用窒息剂来灭火。
Protective Equipment and precautions for firefighters 防护设施和消防注意事项	As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance. Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear. 如果发生火灾，疏散该区域，并从安全距离灭火。穿戴加压器、自给式呼吸器和全套防护装备。从一个受保护的地方或安全距离进行灭火。使用 NIOSH/MSHA 批准的全面自给式呼吸器(SCBA)，并配备全套防护装备。
NFPA 美国消防协会	Health: 0 Flammability: 0 Instability: 0 健康: 0 易燃性: 0 不稳定性: 0

Section 6 - Accidental Release Measures

第6节 - 泄露应急处理

Personal Precautions, protective equipment, and emergency procedures 个人防护、防护设备和急救措施	Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate personal protective equipment as indicated in Section 8. 在清理工作完成前，限制人员进入该区域。不要触摸溢出的材料。如第 8 节所示，穿戴足够的个人防护装备。
Environmental Precautions 环境预防	Prevent material from contaminating soil and from entering sewers or waterways. 防止材料污染土壤，下水道或水道。
Methods and materials for Containment 遏制方法和材料	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately. 在能确保安全的情况下，阻止继续泄漏。用干沙或泥土掩埋泄漏出的液体。立即清理泄露物质。
Methods and materials for cleaning up 清理方法和材料	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（干沙或泥土）吸收泄漏出的物质。将用完的吸收剂放入可接受的废物容器中。 收集所有受污染的吸收剂，并按第 13 节中的说明进行处理。 用洗涤剂 and 清水擦洗该区域；收集所有受污染的洗涤水，以

便妥善处理。

Section 7 - Handling and Storage

第7节 - 操作处置和储存

<p>Handling 操作处置</p>	<p>Don't handle Lithium Ion Rechargeable Battery with metalwork. Do not open, disassemble, crush or burn battery. Ensure good ventilation/ exhaustion at the workplace. Prevent formation of dust. Information about protection against explosions and fires: Keep ignition sources away- Do not smoke. 禁止使用金属制品处理锂离子电池。禁止打开、拆卸、碾压或烧毁电池。 确保工作场所良好的通风。 防止灰尘堆积。注意防止爆炸和火灾的提示：远离火源-禁止吸烟。</p>
<p>Storage 储存</p>	<p>If the Lithium Ion Rechargeable Battery is subject to storage for such a long term as more than 3 months, it is recommended to recharge the Lithium Ion Rechargeable Battery periodically. 3 months: -10°C~+40°C, 45 to 85%RH And recommended at 0°C~+35°C for long period storage. The capacity recovery rate in the delivery state (50% capacity of fully charged) after storage is assumed to be 80% or more. Do not store Lithium Ion Rechargeable Battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects. Keep out of reach of children. Do not expose Lithium Ion Rechargeable Battery to heat or fire. Avoid storage in direct sunlight. Do not store together with oxidizing and acidic materials. 如果锂离子电池需要长期存放3个月以上，建议定期对其进行充电。3个月：-10°C~+40°C、45~85%RH，建议在0°C~+35°C下长期保存。 电池储存后，在交付状态下（50%满充容量）的容量恢复率假设在80%或以上。 请勿将锂离子电池随意存放在箱内或抽屉内，以免电池相互短路或被其他金属物体短路。 请放在儿童接触不到的地方。 请勿将锂离子电池置于高温或火中。避免存放在阳光直射的地方。 不要与氧化性和酸性物质一起存放。</p>

Section 8 - Exposure Controls and Personal Protection

第8节 - 接触控制和个人防护

Engineering Controls 工程控制	Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor. Keep away from heat and open flame. Store in a cool, dry place. 使用局部排气通风或其他工程控制来管控灰尘、烟雾和蒸汽的来源。远离热源和明火，存放在阴凉干燥处。
Personal Protective Equipment 个人防护设备	Respiratory Protection: Not necessary under normal conditions. Skin and body Protection: Not necessary under normal conditions, Wear neoprene or nitrile rubber gloves if handling an open or leaking battery. Hand protection: Wear neoprene or natural rubber material gloves if handling an open or leaking battery. Eye Protection: Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery. 呼吸系统防护：正常情况下不需要 皮肤和身体防护：在正常情况下不需要，如果处理打开或泄露的电池，请戴上氯丁橡胶或丁腈橡胶手套。 手部防护：如果处理打开或泄露的电池，请戴上氯丁橡胶或丁腈橡胶手套。 眼部防护：在正常情况下不需要，如果处理打开或泄露的电池，请戴上安全镜。
Other Protective Equipment 其他防护设备	Have a safety shower and eye wash fountain readily available in the immediate work area. 您可以在附近的工作区域随时使用安全淋浴和洗眼器。
Hygiene Measures 卫生措施	Do not eat, drink, or smoke in work area. Maintain good housekeeping. 禁止在工作区域进食、饮水或吸烟。 保持良好的卫生管理。

Section 9 - Physical and Chemical Properties

第9节 - 物理和化学特性

Physical State 物理状态	Form 外形: Solid 固体
	Color 颜色: Silver 银色
	Odour 气味: Monotony 无味

Change in condition 条件变化:	
pH, with indication of the concentration PH 值: 表示浓度	Not applicable 不适用
Melting point/freezing point 熔点/凝固点	Not available. 不适用
Boiling Point, initial boiling point and Boiling range 沸点、初沸点和沸腾范围:	Not available. 不适用
Flash Point 闪点	Not available. 不适用
Upper/lower flammability or explosive limits 可燃性或爆炸上/下限	Not available. 不适用
Vapor Pressure 蒸汽压力:	Not applicable 不适用
Vapor Density: (Air = 1) 蒸汽密度: (空气=1)	Not applicable 不适用
Density/relative density 密度/相对密度	Not available. 不适用
Solubility in Water: 水中的溶解度	Insoluble 不溶
n-octanol/water partition coefficient 正辛醇/水分配系数	Not available. 不适用
Auto-ignition temperature 自燃温度	130°C
Decomposition temperature 分解温度	Not available. 不适用
Odour threshold 气味极限	Not available. 不适用
Evaporation rate 蒸发率	Not available. 不适用
Flammability (soil, gas) 易燃性 (土壤、气体)	Not available. 不适用
Viscosity 粘性	Not applicable 不适用

Section 10 - Stability and Reactivity

第10节 - 稳定性和反应性

Stability 稳定性	The product is stable under normal conditions. 产品在正常条件下稳定。
Conditions to Avoid (e.g. static discharge, shock or vibration) 避免情况 (如: 静电放电, 冲击振动)	Do not subject Lithium Ion Rechargeable Battery to mechanical shock. Vibration encountered during transportation does not cause leakage, fire or explosion. Do not disassemble, crush, short or install with incorrect polarity. Avoid mechanical or electrical abuse. 禁止让锂离子电池受到机械冲击。

	<p>运输过程中受到的振动不会导致漏液、起火或爆炸。</p> <p>禁止拆解、挤压，将正负极短路或反装。避免机械或电气滥用。</p>
Incompatible Materials 不相容材料	Not Available 不适用
Hazardous Decomposition Products 危险的分解产物	<p>This material may release toxic fumes if burned or exposed to fire.</p> <p>该材料在燃烧或起火时会释放有害气体。</p>
Possibility of Hazardous Reaction 有害反应的可能性	Not Available 不适用

Section 11 - Toxicological Information

第11节 - 毒理学资料

Irritation 刺激性	<p>Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.</p> <p>只有当电芯受到机械、加热或电滥用损害外壳时，才会对人体有刺激风险。如果发生这种情况，可能会对皮肤、眼睛和呼吸道产生刺激。</p>
Sensitization 致敏性	Not Available 不适用
Neurological Effects 神经系统的影响	Not Available 不适用
Teratoaenicity 致畸性	Not Available 不适用
Reproductive Toxicity 生殖毒性	Not Available 不适用
Mutagenicity (Genetic Effects) 诱变性(遗传效应)	Not Available 不适用
Toxicologically Synergistic Materials 毒理学协同材料	Not Available 不适用

Section 12 - Ecological Information

第12节 - 生态学资料

General note: 一般注意事项:	Water hazard class 1(Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. 水危害级别 1 (自我评估): 对水有轻微污染 禁止将未稀释或大量的产品倒入地下水、水源或污水处理系统中。
Anticipated behavior of a chemical product in environment/possible environmental impace/ecotoxicity 化学品在环境中的预期行为/可能的环境影响/生态毒性	Not Available 不适用
Mobility in soil 土壤中的移动性	Not Available 不适用
Persistence and Degradability 持久性和降解性	Not Available 不适用
Bioaccumulation potential 富集可能性	Not Available 不适用
Other Adverse Effects 其他不良影响	Not Available 不适用

Section 13 - Disposal Considerations

第 13 节 - 废弃处置注意事项

Product disposal recommendation: Observe local, state and federal laws and regulations.

Packaging disposal recommendation: Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local, state and federal laws and regulations.

产品废弃处理建议: 遵守当地, 州和联邦的法律法规。

包装废弃处理建议: 请注意丢弃的电池可能会引起火灾, 请将电池两端用胶带隔离。禁止拆卸电池。将电池容器完全放电(无残液, 无剩余粉末, 避免刮擦)。容器可以回收或重复使用。遵守当地, 州和联邦的法律法规。

Section 14 - Transport Information

第14节 - 运输信息

UN No. and Shipping name:

UN 3480 Lithium ion batteries

UN 3481 Lithium ion batteries packed with equipment

UN 3481 Lithium ion batteries contained in equipment

UN编号及运输专有名称:

UN 3480 Lithium ion batteries

UN 3481 Lithium ion batteries packed with equipment

UN 3481 Lithium ion batteries contained in equipment

Label for conveyance: Lithium Battery Mark, class 9 lithium battery hazard label (Only for UN3480), Cargo Aircraft Only Label (Only for UN3480)

运输标签: 锂电池标记, 第9类锂电池危险品标签 (只适用UN3480), 仅限货机标签 (只适用UN3480)

Packaging Group/包装等级: N/A/不适用

EmS No./EmS 编号: F-A, S-I

Marine pollutants/海洋污染物: No/否

ICAO/IATA	Shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DRG Packing Instructions PI 965 IB, PI 966 II, PI 967 II 根据国际民用航空组织(ICAO), TI或者国际航空协会 (IATA), DGR包装说明PI 965 IB, PI 966 II, PI 967 II相关规定进行空运	DGR 65 th (2024) ICAO (2023-2024 edition)
IMDG CODE	Shipped by sea in accordance with International Maritime Dangerous Code (IMDG CODE) Special Provision 188 根据《国际海运危险货物规则》(IMDG CODE)特殊规定188条款相关规定运输	IMDG CODE (Amdt. 41-22)

Section 15 - Regulatory Information

第15节 - 法规信息

Law information 法律信息

《Dangerous Goods Regulations》

《危险品规则》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《关于危险货物运输的建议书 规章范本》

《International Maritime Dangerous Goods Code》

《国际海运危险货物规则》

《Technical Instructions for the Safe Transport of Dangerous Goods》

《危险品安全运输技术指令》

Section 16 - Other Information

第 16 节 - 其他信息

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