Material Safety Data Sheets (MSDS)
原材料化学品安全技术说明书

Applicant **申请单位**	Shenzhen Hypercell Co., Ltd 深圳市海盛电池有限公司
Address **地址**	Room 2706-2707, Baoshan Shidai Building, Minqiang Community, Longhua District, Shenzhen 518131 Guangdong, China 广东省深圳市龙华区民治街道民强社区宝山时代大厦 27 楼 2706-2707 室

The submitted sample and sample information was/were submitted and identified by/on the behalf of the client/ 委托检测之样品及样品信息由申请者提供并确认

Sample Name **样品名称**	Rechargeable Lithium-ion Battery 可充电锂离子电池
Manufacturer **制造商**	Shenzhen Hypercell Co., Ltd 深圳市海盛电池有限公司
Model No. **型号**	HPL9028101-2S2P
Job Received Date **案件接收日期**	2026-10-20
Preparation Period **准备日期**	2026-10-21 to 2026-10-26
Preparation standard **编制标准**	REACH Regulation (EC) No 1907/2006 ANNEX II with its amendment Regulation (EC) No 1272/2008, Regulation (EU) 2015/830 and Regulation (EU) 2020/878. REACH 法规(EC) No 1907/2006。附录 11 和修订法案(EC) No 1272/2008, (EU) 2015/830 及(EU) 2020/878.

Edited By 编辑人	Reviewed By 审核人	Approved By 批准人
谢艳云	熊明智	
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Shen Zhen Webb Testing Technology Co.,LTD 深圳市韦伯检测技术有限公司 实验室检测章

Section 1. Chemical Product and Company Identification
第一项：配制品名称和制造商信息

Product identifier
产品标识

Product name 产品名称	Rechargeable Lithium-ion Battery 可充电锂离子电池
Model No. 型号	HPL9028101-2S2P
Manufacture name 制造商名称	Shenzhen Hypercell Co., Ltd 深圳市海盛电池有限公司
Manufacture Address 制造商地址	Room 2706-2707, Baoshan Shidai Building, Minqiang Community, Longhua District, Shenzhen 518131 Guangdong, China 广东省深圳市龙华区民治街道民强社区宝山时代大厦 27 楼 2706-2707 室
Contact Person 联系人	/
Telephone 电话	+86-0755-23764134
Fax 传真	/
E-mail address 电子邮件地址	Shirley@hypercellbattery.com
Emergency phone 紧急通信电话	+86-0755-23764134
Item Code 项目号	WEB261020010RB

Section 2. Hazards Summarizing
第二项：危害信息

Hazard Description **危险性描述**	Not dangerous with normal use. Do not dismantle, open or shred the battery ingredients contained within or their ingredients products could be harmful. 正常使用没有危险，不能拆解、打开或分解电池，里面的材料或成分是有害的。
Primary Route(s) of Exposure **接触途径**	Inhalation, Ingestion, Skin contact and Eye contact. 吸入、食入、皮肤接触、眼睛接触。
Potential Health Effects **潜在健康影响**	**Inhalation:** Vapors or mists from a ruptured battery may cause respiratory irritation. **吸入：**破裂的电池散发出来的气雾会引起呼吸道刺激。 **Ingestion:** The battery ingredients contained within or their ingredients products can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. **食入：**电池的组成成分或原料可以导致嘴，食道和胃肠道的严重化学烧伤。 **Skin:** Skin contact with contents of an open battery can cause severe irritation or burns to the skin. **皮肤：**皮肤接触到电池的内部化学材料可能会导致严重的刺激或烧伤皮肤。 **Eye:** Eye contact with contents of an open battery can cause severe irritation or burns to the eye. **眼睛：**眼睛接触到电池的内部化学材料可能会导致严重的刺激或烧伤眼睛。

Section 3. Composition/Information on Ingredients
第三项：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 Cobalt Oxide 钴酸锂	45.3	12190-79-3
Graphite 石墨	20.6	7782-42-5
Polyvinylidene Fluoride (PVDF) 聚偏氟乙烯	0.3	24937-79-9
Aluminum 铝	8.4	7429-90-5
Styrene Butadiene Rubber (SBR) 丁苯橡胶	0.4	9003-55-8
Carboxymethylcellulose 羧甲基纤维素	0.3	9000-11-7
Copper 铜	7.7	7440-50-8

Nickel 镍	0.3	7440-02-0
Polyethylene 聚乙烯	3.1	9002-88-4
Lithium Hexafluorophosphate 六氟磷酸锂	10.6	21324-40-3
Nylon 尼龙	1.2	24937-16-4
Polypropylene 聚丙烯	1.8	9003-07-0

Note: CAS number is Chemical Abstract Service Registry Number.
注意：CAS 号是化学文摘服务注册号。
N/A=Not apply 不适用。

Section 4. First Aid Measures
第四项：急救措施

General advice
一般建议
In case of accident or unwellness, seek medical advice immediately
如果发生意外或不适，立即寻求医疗帮助。

Inhalation
吸入
Remove source of contamination or move victim to fresh air. Obtain medical advice.
移除污染源或者将受害者移至新鲜空气处。寻求医生帮助。

Ingestion
食入
Please rinse mouth thoroughly with water. Induce vomiting under the guidance of professional personage. Please seek medical treatment in time.
立即用清水漱口，在专业人士的指导下催吐，立即寻求医疗帮助。

Skin contact
皮肤接触
Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.
脱下已污染衣服，用大量的水冲洗至少 15 分钟，立即寻求医疗帮助。

Eye contact
眼睛接触
Irrigate with flowing water for 15 minutes. If irritation persists, consult a physician.
用流动水冲洗 15 分钟，如刺激持续发生，寻求医生帮助。

Protecting of first-aiders
急救人员的防护
Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.
确保医护人员了解产品的危害特性，并采取自身防护措施，以保护自己和防止污染传播。

Most important symptoms and effects, both acute and delayed
最重要的症状和效果，急性和延迟性
Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
有限的证据表明反复或长期职业接触可能会产生涉及器官或生化系统累积性的健康影响

Indication of any immediate medical attention and special treatment needed **紧急医疗处理和特殊处理的说明**	Treat symptomatically，Symptoms may be delayed. 根据症状治疗，注意症状可能会出现延迟性。

Section 5. Fire Fighting Measures
第五项：消防措施

Characteristics of Hazard **危险特性**	Toxic fumes, gases or vapors may evolve on burning. 着火时可释放有害浓烟、气体或者蒸汽。
Hazardous Combustion Products **燃烧产生的危险物品**	Carbon monoxide, carbon dioxide, lithium oxide fumes and so on. 一氧化碳，二氧化碳，锂氧化物烟气等。
Fire-extinguishing Methods and Extinguishing Media **灭火方法及灭火剂**	Please use water, dry sand and other proper fire extinguishing media. 请使用水，干燥沙等合适的灭火介质。
Attention in Fire-extinguishing **灭火注意事项**	The firemen should put on antigas masks and full fire-fighting suits. 消防人员须佩戴防毒面具、穿全身消防服。

Section 6. Accidental Release Measures
第六项：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**	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. 限制区域，直到完成清理工作。请勿触摸泄漏的材料。穿戴适当的个人防护设备，如第 8 部分所示。
Environmental Precautions **环境保护措施**	Prevent material from contaminating soil and from entering sewers or waterways. 防止物质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，可以用干砂或沙土来遏制液体泄露，立即清理泄漏。

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(干砂或沙土)吸收溢出的材料。污染物转移到可吸收废物的容器。收集所有受污染的吸收剂和根据第 13 部分的指令处置。用洗涤剂和水清洁污染区域，收集所有受污染的洗涤水进行适当处置。

Section 7. Handling and Storage
第七项：操作和储存

Handling **操作**	Don't handing the batteries in manner that allows terminals to short circuit. Do not open, disassemble, crush or burn battery. 不要以让接头短路的方式对电池进行操作。不要打开，分解，挤压或燃烧电池。
Storage **储存注意事项**	If the Lithium battery is subject to storage for such a long term as more than 3 months, it is recommended to recharge the Lithium battery periodically. Operating temperature: Charge: 10°C-45°C. Discharge: -10°℃-55°C. And recommended at 20±5°C for storage properties. The capacity recovery rate in the delivery state (50% capacity of fully charged) after storage is assumed to be 80% or more. The voltage for a long time storage shall be 7.9V-8.2V range per cell block. Do not storage Lithium 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. 如果锂电池存放时间超过 3 个月，建议定期对锂电池进行充电。工作温度：充电：10°℃-45°℃。放电：-10°℃~55℃。建议在 20±5°℃下储存。储存后的输送状态下的容量恢复率（满电容量的 50%）假设为 80%或更高。长时间储存的电压应为每个电池块 7.9V~8.2V 范围。不要将锂电池随意存放在箱子或抽屉中，因为它们可能会相互短路或被其他金属物体短路。放置在儿童接触不到的地方。

Section 8. Exposure Controls/Personal Protection
第八项：接触控制和个人防护措施

Engineering Controls **工程控制**	No engineering controls are required for handling batteries that have not been damaged. Personal protective equipments for damaged batteries should include chemical resistant gloves and safety glasses. 操作未破损的电池，没有工程控制要求。对于破损的电池，个人防护用品应包括化学品防护手套和安全眼镜。

	Respiratory Protection: In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use. Not necessary under conditions of normal use. 呼吸保护：当电池排气阀打开时，应尽量使通风设备开至最大，避免将打开排气阀的电芯局限在某一狭窄空间内。正常操作条件下，呼吸保护是不必要的。正常使用条件下不必考虑。
Personal Protective Equipment **个人防护设备**	Protective Gloves: Not necessary under conditions of normal use. 防护手套：正常使用条件下不必考虑。 Other Protective Clothing or Equipment: Not necessary under conditions of normal use. 其他防护服装或设备：正常使用条件下不必考虑。 Personal Protection is recommended for venting battery: Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields. 当电池排气阀打开时，应做好个人防护：呼吸防护，防护手套，防护服装和有护边的安全玻璃罩都是要准备的。

Section 9. Physical and Chemical Properties
第九项：理化特性

Physical State **物理状态**	Form: Solid 形态：固体 Color: Gray 颜色：灰色 Odour: Odorless 气味：无气味
Change in condition **变化条件:**	No data is available 无数据可提供
pH, with indication of the concentration **pH，有浓度指示**	No data is available 无数据可提供
Melting point/freezing point **熔点/凝固点**	No data is available 无数据可提供
Boiling Point, initial boiling point **沸点，初沸点**	No data is available 无数据可提供
Flash Point **闪点**	No data is available 无数据可提供
Upper/lower flammability or explosive limits **上/下燃烧或爆炸限值**	No data is available 无数据可提供
Vapor Pressure **蒸汽压**	No data is available 无数据可提供

Vapor Density: (Air = 1) **蒸汽密度: (空气= 1)**	No data is available 无数据可提供
Density/relative density **密度/相对密度**	No data is available 无数据可提供
Solubility in Water **水溶性**	Insoluble 不能溶解
n-octanol/water partition coefficient **正辛醇/水分配系数**	No data is available 无数据可提供
Auto-ignition temperature **自燃温度**	No data is available 无数据可提供
Decomposition temperature **分解温度**	No data is available 无数据可提供
Odout threshold **溴阈**	No data is available 无数据可提供
Evaporation rate **蒸发速率**	No data is available 无数据可提供
Flammability (soil, gas) **易燃性（土壤，气体）**	No data is available 无数据可提供
Viscosity **粘度**	No data is available 无数据可提供

Section 10. Stability and Reactivity
第十项：稳定性和反应活性

Stability **稳定性**	Stable under normal temperature and pressure. 推荐的贮存条件下是稳定的。
Conditions to Avoid **应避免的条件**	Heat above 70°C or Incinerate, Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions. 加热 70°C 以上或焚烧、变形、毁坏、粉碎、拆卸、过充电、短路，长时间暴露在潮湿的条件下。
Hazardous Decomposition Products **危害分解物**	Toxic Fumes, and may form peroxides. 有毒烟雾，并可能形成过氧化物。
Possibility of Hazardous Reaction **危险反应的可能性**	If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons. 如果发生泄露，避免与强氧化剂，无机酸，强碱，卤代烃接触。

Section 11. Toxicological Information
第十一项：毒理学信息

Irritation **刺激**	In the event of exposure to internal contents, vapor 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产生刺激性。
Sensitization **致敏**	No data is available 无数据可提供
Reproductive Toxicity **再生毒性**	No data is available 无数据可提供
Toxicologically Synergistic Materials **协同材料毒理学**	No data is available 无数据可提供

Section 12. Ecological Information
第十二项：生态学信息

General note **基本信息**	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到达地下水、水道或污水系统。
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**	No data is available 无数据可提供
Mobility in soil **土壤中移动性**	No data is available 无数据可提供
Persistence and Degradability **持久性和降解性**	No data is available 无数据可提供

Section 13. Disposal Considerations
第十三项：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 abandoned **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. Prevent materials from entering drains, sewers, or waterways. 废弃电池不应被视为普通垃圾。不应被扔进火中或置于高温中。不应进行解剖、刺穿、压碎或类似处理。防止材料进入下水道、下水道或水道。

Section 14. Transport Information
第十四项：运输信息

The batteries should be securely packed and protected against short-circuits. Examine whether the package of the containers are integrate and tighten closed before transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles. Don't put the goods together with oxidizer and chief food chemicals. The transport vehicle and ship should be cleaned and sterilized before transport. During transport, the vehicle should prevent exposure, rain and high temperature. For stopovers, the vehicle should be away from fire and heat sources. When transported by sea, the assemble place should keep away from bedroom and kitchen, and isolated from the engine room, power and fire source. Under the condition of Road Transportation, the driver should drive in accordance with regulated route, don't stop over in the residential area and congested area.

电池应牢固地填充，防止短路。检查集装箱的包装是否在运输前整合并拧紧。确定没有一个货物掉落、跌落和破损，防止货物堆崩溃。不要把货物与氧化剂，食品放在一起。运输车辆和船舶在运输前应清洗和消毒，运输车辆应避免接触雨水和高温。停留时，车辆应远离火和热源。海运时，装配位置应远离卧室和厨房，并从机舱、电源和火源处隔离。公路运输情况下，司机开车应该按照规定路线，不要在居民区和人口稠密区停留。

UN-Number 联合国运输编号	UN3480 & UN3481
	LITHIUM ION BATTERIES (including lithium ion polymer batteries) 锂离子电池组（包括移动电源）
UN proper shipping name UN 合适的运输名称	Battery Packed with Equipment 电池组与设备一起 Battery in Equipment 电池内置设备内
Transport hazard class(es) 运输危害分类	9
Packing Instruction (if applicable) 包装方式（如果适用）	965、966、967
Marine pollutant 海洋污染物	No 不是

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

根据 MARPOL 73/78 附件 11 和 IBC 规则进行散装运输

No data available.

无可用数据

空运 IATA DGR S(67th)

Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instructions 965 Section IB、(PI) 966、967 Section II of IATA DGR 67th (2026 Edition) for transportation.

可根据民用航空组织（ICAO），TI 或国际航空运输协会（IATA），DGR 67th（2026 版）包装说明(PI) 965 Section IB、(PI)966、 967 Section II 相关规定进行空运。

海运 IMDG(2024 Edition)

The batteries are not restricted to IMDG Code 2024 Edition (Amdt 42-24) according to special provision 188.

根据特殊规定 188，该电池不受 IMDG Code 2024 版(Amdt 42-24)限制。

铁路 RID (2025 Edition)

Packaging for railway transportation can be carried out in accordance with the European Agreement concerning the International Carriage of Dangerous Goods by Rail (RID 2025), in accordance with special provision 188.

可按 RID（2025 版）《国际危险货物铁路运输欧洲协定》(RID)根据特殊规定 188 进行包装铁路运输。

陆运 ADR(2025 Edition)

Packaging road transportation can be carried out in accordance with the relevant provisions of the ADR (2025 version) European Agreement concerning the international carriage of Dangerous Goods by Road.

可按 ADR（2025 版）《国际危险货物道路运输欧洲协定》相关规定进行包装道路运输。

注意 Note:

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《关于危险货物运输的建议书 试验和标准手册》第 38.3 节规定的适用测试。

Section 15. Regulatory Information
第十五项：法规信息

《Dangerous Goods Regulations》

《危险物品规则》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《危险货物运输的建议模型规定》

《International Maritime Dangerous Goods》

《国际海上危险货物运输》

《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》

《危险货物分类与代码》

《Occupational Safety and Health Act》(OSHA)

《职业安全与健康法案》(OSHA)

《Toxic Substance Control Act》(TSCA)

《有毒物质控制法》（TSCA）

《Consumer Product Safety Act》(CPSA)

《消费者产品安全法案》（CPSA）

《Federal Environmental Pollution Control Act》(FEPCA)

《联邦环境污染控制法》（FEPCA）

《The Oil Pollution Act》(OPA)

《石油污染法》（OPA）

《Superfund Amendments and Reauthorization Act TitleⅢ(302/311/312/313)》(SARA)

《超级基金修正案和再授权法案 TitleⅢ(302/311/312/313)》(SARA)

《Resource Conservation and Recovery Act》(RCRA)

《资源保护和恢复法案》（RCRA）

《Safety Drinking Water Act》(CWA)

《安全饮用水法》（CWA）

《California Proposition 65》

《加州 65 号提案》

《Code of Federal Regulations》(CFR) 49 CFR sections 100-185, 49 CFR -173.185

《联邦条例》(CFR) 49 CFR sections 100-185, 49 CFR -173.185

EU Battery Directive (2006/66/EC, 2013/56/EU)

欧盟电池指令(2006/66/EC, 2013/56/EU)

Regulation (EC) No. 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

关于化学品的注册、评估、授权和限制(EC)第 1907/2006 号规例

In accordance with all Federal, State and local laws.

符合所有联邦、州和地方法律。

Section 16. Other Information
第十六项：其他信息

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