

材料安全数据表

MATERIAL SAFETY DATA SHEET

样品名称: Name of Sample:	锂离子电池 Lithium-ion battery
型号/规格: Model/Type:	MD1054D 3.85V 49mAh
委托单位: Commissioner:	常州微宙电子科技有限公司 Changzhou Weizhou Electronic Technology Co., Ltd.
有效期: Validity:	2025-01-01 ~ 2025-12-31

深圳普瑞赛思检测科技股份有限公司
Shenzhen Precise Testing Technology Co., Ltd.



材料安全数据表

MATERIAL SAFETY DATA SHEET

1. 化学品及企业标识 Chemical product and company identification	
样品名称 Name of Sample	锂离子电池 Lithium-ion battery
型号/规格: Model/Type	MD1054D 3.85V 49mAh
委托单位 Commissioned by	常州微宙电子科技有限公司 Changzhou Weizhou Electronic Technology Co., Ltd.
委托单位地址 Commissioner address	常州市金坛区萍湖路111号 111Pinghu Road, Jintan District, Changzhou
生产企业 Factory	常州微宙电子科技有限公司 Changzhou Weizhou Electronic Technology Co., Ltd.
生产企业地址 Factory address	常州市金坛区萍湖路111号 111Pinghu Road, Jintan District, Changzhou
邮编/Zip code	213225
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应急电话/Emergency telephone call	13861017306
接样日期: 2024-12-05 Receiving date:	
签发日期: 2024-12-25 Date of issue:	

Approved by:

批准:

Title: Manager

职务: 经理

Prepare by:

编制:

Engineer

工程师

2. 危险性概述 Hazards identification

分类 Classification:

该化学品不被法规(EC)No.1272/2008(CLP)认为是危险的。本产品为密封电池，按 GHS 法规不需要 SDS。以下提到的危险性是电池破裂造成的。

This chemical is not considered hazardous by GHS. This product is an article which is a sealed battery and as such does not require an SDS per GHS. The hazards indicated are for a ruptured battery.

急性毒性-口服/Acute toxicity – Oral	第 4 类/Category 4
急性毒性-皮肤/Acute toxicity - Dermal	第 4 类/Category 4
Skin corrosion/irritation/皮肤腐蚀/刺激	第 1B 类/Category 1B
严重眼睛损失/眼睛刺激/Serious eye damage/eye irritation	第 2 类/Category 2
皮肤致敏/Skin sensitization	第 1 类/Category 1
致癌性/Carcinogenicity	第 2 类/Category 2
特异性靶器官毒性(重复暴露)Specific target organ toxicity (repeated exposure)	第 1 类/Category 1

标签要素/Label elements:

信号词/Signal Word: 危险/Danger

风险声明 Hazard Statements

H302	吞食有害/Harmful if swallowed.
H312	与皮肤接触有害/Harmful in contact with skin.
H332	吸入有害/Harmful if inhaled.
H318	对眼睛造成严重损害/ Causes serious eye damage.
H317	可能导致皮肤过敏反应/May cause an allergic skin reaction.
H350	可能致癌/May cause cancer.
H371	可能对器官造成损害/May cause damage to organs.
H335	可能引起呼吸道刺激/May cause respiratory irritation.

Symbol 标志:



GHS08



GHS05



GHS07

这个产品是一种含有化学物质的物品。安全信息是为了可能发生的固体物质暴露而提供，本产品的预期用途不应导致化学物质暴露。万一破裂，上述危害存在。

This product is an article which contains a chemical substance. Safety information is given for exposure to the article as solid. Intended use of the product should not result in exposure to the chemical substance, this is a battery. In case of rupture: the above hazards exist.

预防说明--预防

Precautionary Statements – Prevention

P201	在使用前获得特殊说明 Obtain special instructions before use.
P202	阅读和理解安全注意事项后再操作 Do not handle until all safety precautions have been read and understood.
P281	按要求使用个人防护装备 Use personal protective equipment as required.
P264	处理后彻底清洗脸、手和任何暴露的皮肤 Wash face, hands and any exposed skin thoroughly after handling.
P272	不应让受污染的工作服离开工作场 Contaminated work clothing should not be allowed out of the workplace.
P210	远离热源/火花/明火/热表面——禁止吸烟 Keep away from heat/sparks/open flames/hot surfaces –no smoking.
P270	使用本品时请勿吃、喝、吸烟 Do not eat, drink or smoke when using this product.

预防声明—响应

Precautionary Statements – Response

	若不慎暴露，应立即就医。应安排特殊治疗(见标签上的补充急救/说明) If exposed or connected: Get medical advice/attention. Specific treatment (see supplemental first aid/instruction on this label). 皮肤接触：若接触皮肤,用大量的肥皂水清洗。如果出现皮肤刺激或皮疹，应立即脱下受污染的衣物并进行清洗，:如果感觉不适，请立即就医。 Skin contact: If on skin, wash with plenty of soap and water. Take off contaminated clothing and washing, if skin irritation or rash occurs: get medical advice/attention if feel unwell.
P301+ P330+ P308	眼睛接触：若不慎入眼，应小心用水冲洗一段时间，取下隐形眼镜，如果方便处理，应继续进行冲洗；如感觉不适，应立即送医。 Eye contact: If in eyes, Rinse cautiously with water for several minutes, remove contact lenses, if present and easy to do, Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell.
	吸入：如果吸入，且感觉呼吸困难，将患者转移到空气新鲜的地方，保持一个适合呼吸的姿势休息；如果出现呼吸道症状或如果感觉不适，应立即送医。 Inhalation: If inhalation, if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician if you feel unwell.
	食入：如不慎吞下，应立即漱口，不要催吐。如果感觉不适，呼叫解毒中心或医

生/内科医生。 Ingestion: If swallowed: rinse mouth immediately, do not induce vomiting and call a POISON CENTER or doctor/physician if you feel unwell.	
预防声明—存储 Precautionary Statements – Storage	
P405	加锁存储/ Store locked up
预防声明—处置 Precautionary Statements – Disposal	
P501	内容物/容器处理到经批准的废物处理工厂/Dispose of contents/container to an approved waste disposal plant.
未分类的危险 Hazards not otherwise classified (HNOC) 不适用 Not applicable	
其他信息 Other information 对水生生物有害，可能对水生环境造成长期不利影响 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	
与其他化学物质的相互作用 Interactions with other chemicals 使用酒精饮料可能会增强毒性作用 Use of alcoholic beverages may enhance toxic effect.	

3. 成分/组成信息 Composition information			
材料及组分 Material or ingredient	化学式 Chemical Formula	CAS 号 CAS No.	重量含量 Wt %
钴酸锂 Lithium Cobalt Dioxide	LiCoO ₂	12190-79-3	23.13
石墨 Graphite	C	7782-42-5	14.77
聚偏氟乙烯树脂 Polyvinylidene fluoride	(C ₂ H ₂ F ₂) _n	24937-79-9	0.28
铝 Aluminum	Al	7429-90-5	3.41
铜 Copper	Cu	7440-50-8	9.13
聚乙烯 Polyethylene	(C ₂ H ₄) _n	9002-88-4	1.34
不锈钢 Stainless steel	/	12597-68-1	32.04
电解液 /	/	/	15.44

聚丙烯酸 Polyacrylic acid	$(C_3H_4O_2)_n$	9003-01-4	0.09
聚酰亚胺 PET	$(C_{10}H_8O_4)_n$	25038-59-9	0.37
铅 Lead	Pb	7439-92-1	无 Not Detected
镉 Cadmium	Cd	7440-43-9	无 Not Detected
汞 Mercury	Hg	7439-97-6	无 Not Detected

4. 急救措施 First aid measures

眼睛: 万一接触, 立即用大量的清水冲洗至少 15 分钟, 翻起上下眼睑, 直到化学的残留物消失为止, 迅速就医。

Eye: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

皮肤: 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。

Skin: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

吸入: 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。

Inhalation: Remove from exposure and move to fresh air immediately. Use oxygen if available.

食入: 饮用两杯牛奶或水。如果当事人仍然清醒可以采取催吐的方法, 并且立即就医。

Ingestion: Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician

5. 消防措施 Fire-fighting measures

燃点: 不适用

Flash Point: N/A.

自燃温度: 不适用

Auto-Ignition Temperature: N/A.

灭火介质: 大量水 (降温), 二氧化碳

Extinguishing Media: Water, CO₂.

特殊灭火程序: 自给式呼吸器

Special Fire-Fighting Procedures

Self-contained breathing apparatus.

燃烧产生的危险物品: 一氧化碳, 二氧化碳, 锂氧化物烟气

Hazardous Combustion Products

Carbon monoxide, carbon dioxide, lithium oxide fumes.

危险特性/Danger characteristic:

暴露在过热的环境中会导致电池内液体电解质的释放。

Exposure to excessive heat can cause venting of the liquid electrolyte.

当暴露在火灾环境中时，电池可能会爆裂并释放出危险的分解产物。

Battery may burst and release hazardous decomposition products when exposed to a fire situation.

灭火措施/Fire-Fighting method:

立即疏散人群并报火警。

Evacuate people and call the fire immediately.

消防人员必须配备过滤器面罩或隔离式呼吸器。

The firefighters must equip with filtermask (full mask) or isolated breathing apparatus.

消防人员必须穿能在逆风方向防火的衣服。

The firefighters must wear the clothes which can defense the fire in the upwind direction.

大量的水灭火，直至降温，并防止复燃或爆炸。

Spray water on the containers in the fireplace to keep them cool until finish extinguishment.

6. 泄露应急处理

Accidental release measures

为防止电池材料泄露或释放采取的措施

Steps to be taken in case Material is Released or Spilled

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

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery 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.

废弃物处置方法

Waste Disposal Method

建议将电池完全放电，消耗电池内部的锂金属，并且深埋于土壤中。

It is recommended to discharge the battery to the end, to use up the metal lithium inside the battery, and to bury the discharged battery in soil.

7. 操作处置和储存

Handling and storage

处理/Handling:

1. 不要让电池端子相互接触或与其他金属接触。

Do not allow battery terminals to contact each other, or contact with other metals.

2. 不要将电芯或电池放入火中或加热。不要直接焊接电池。不要将电芯或电池放在靠近火源或加热器等地方。

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.

3. 不要让电池受到过度的物理冲击或振动。

Do not expose the battery to excessive physical shock or vibration.

4. 不要将电池浸入水中、投掷或弄湿。

Do not immerse, throw, and wet a battery in water.

5. 应避免短路。短路会降低蓄电池的寿命，并可能导致周围材料着火。与短路电池的物理接触会导致皮肤灼伤。

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 to short- circuited battery can cause skin burn.

6. 不应打开、销毁或焚烧电池，因为电池可能泄漏或破裂，并将密封容器中的成分释放到环境中。

The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.

7. 将电池放置在儿童触及不到的地方。

Place the cell beyond the child packing and container.

8. 不要将电池直接连接到汽车的电源插座或香烟插座上。

Do not connect the battery directly to an electric outlet or cigarette socket in a car.

9. 请务必使用指定的蓄电池充电器，并正确遵循充电说明。

Be sure to use the specified charger for battery, and follow the charging instructions correctly.

10. 不要将新旧电池混在一起使用，也不要与镍镉电池、干电池或其他制造商的电池或产品混合使用。

Do not mix old and new batteries together, neither with Ni-Cd, dry batteries or another manufacturer batteries or product.

储存/Storage:

1. 电池应与其他材料分开，并存放在不燃、通风良好、有洒水装置保护的结构中，墙壁和电池堆之间应有足够的间隙。

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.

2. 将样品置于阴凉、干燥、通风良好的地方（温度-20~30℃，湿度：45~85%）。不要长时间暴露在阳光直射下。远离火源和热源。不要用氧化剂和酸保存样品。

Keep the sample in the cool, dry and well-ventilated place (temperature: -20~30 °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.

3. 配备相应种类和数量的灭火器材。储存场所应配备适当的掩蔽材料，以便进行泄漏处理。

Equip with relevant types and quantities of the extinguishment instruments. The storage place should be equipped with suitable shelter materials for divulgence handling.

4. 对于可充电电池，即使不使用电池，也应每 6 个月将电池充电至制造商规定的电量。

For rechargeable battery, charge the battery every 6 months to the amount specified by the manufacture, even if the battery is not used.

8. 接触控制/个人防护

Exposure controls/personal protection

工程控制/Engineering Control

远离热源和明火。启动空调系统，维持温湿度稳定

Keep away from heat and open flame. Start the air conditioning system to keep the temperature and humidity stable.

呼吸防护/ Respiratory Protection

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。

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.

眼睛保护/Eyes Protection

在正常使用条件下不需要。如果处理泄漏或破裂的电池,请戴上防护眼镜。

Not necessary under conditions of normal use. Wear protective glasses if handling a leaking or ruptured battery.

皮肤和身体保护 Skin and Body Protection

在正常使用条件下不需要。在处理泄漏或破裂的电池时,穿上防火防毒服。

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

防护手套/ Protective Gloves

正常使用条件下不必考虑。

Not necessary under conditions of normal use.

通风条件/ Ventilation

正常使用条件下不必考虑。

Not necessary under conditions of normal use.

其他防护服装或设备/ Other Protective Clothing or Equipment

正常使用条件下不必考虑。

Not necessary under conditions of normal use.

电池开阀试验时应做好个人防护

Personal Protection is recommended for venting battery

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。

Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

9. 物理和化学特性

Physical and chemical properties

外形: 扣式

Appearance: Button

气味: 泄漏时, 有醚的气味。

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.

10. 稳定性和反应活性 Stability and reactivity

稳定性: 产品在第 7 节所述的条件下稳定。

Stability: Product is stable under conditions described in Section 7.

应避免的条件: 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。

Conditions to Avoid : Heat above 70° C or incinerate. Deform. Mutilate. Crush. Disassemble. Overcharge. Short circuit. Expose over a long period to humid conditions.

应避免的材料: 氧化剂, 碱, 水。

Materials to avoid: Oxidising agents, alkalis, water.

危险分解物: 有毒烟雾, 并可能形成过氧化物。

Hazardous Decomposition Products : Toxic Fumes, and may form peroxides.

聚合危害: 不适用

Hazardous Polymerization : N/A.

如果发生泄露, 避免与强氧化剂, 无机酸, 强碱, 卤代烃接触。

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons.

11. 毒理学资料 Toxicological information

标志及症状: 无, 除非电池破裂。

Signs & symptoms: None, unless battery ruptures.

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。

In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.

吸入: 对肺有刺激性。

Inhalation: Lung irritant.

皮肤接触: 对皮肤刺激性。

Skin contact: Skin irritant.

眼睛接触: 对眼睛有刺激性。

Eye contact: Eye irritant

食入: 吞下中毒。

Ingestion: Poisoning if swallowed.

下列情况下会危害人员身体健康: 如果与电池内部材料直接接触, 皮肤可能会出现干燥、灼烧等轻微或严重的刺激, 并且损坏靶器官的神经, 肝脏和肾脏。

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to severe irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

12. 生态学资料 Ecological information

对哺乳动物的影响: 目前未知。

Mammalian effects: None known at present.

生态毒性: 目前未知。

Eco-toxicity: None known at present.

生物体内积累: 慢慢地生物降解。

Bioaccumulation potential: Slowly Bio-degradable.

环境危害: 目前没有已知的环境危害。

Environmental fate: None known environmental hazards at present.

其他有害影响: 不要将电池扔进环境中, 可能造成水或土壤污染。

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

13. 废弃处置 Disposal consideration

物质处理方法/Appropriate Method of Substance:

为了防止短路, 在处理前应将蓄电池完全放电。

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

电池含有可回收材料, 建议回收利用。

The battery contains recyclable materials, and it is suggested recycle.

操作前请参阅国家或地方法规。

Refer to National or Local regulations before handling.

电池的处理应由获得国家或地方法规的许可的具有危险废物处理和危险废物运输的专业处理公司进行。

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.

14. 运输信息
Transport information

空运，依据 IATA-DGR 第 66 版（2025 年 1 月 1 日至 12 月 31 日生效）

Air transportation, according to IATA-DGR 66th Edition (Effective 1 January-31 December 2025)

UN 编号 UN Number	正确的装运名称 Proper Shipping name	包装等级 Packaging Group	危险等级 Hazard Class	包装要求 Packaging requirement
UN3480	锂离子电池(包括锂离子聚合物电池) lithium ion batteries(including lithium polymer batteries)	无要求 NIL	第九类危险品 Class 9	包装说明965第IB节 Section IB of Packing Instructions 965
UN3481	锂离子电池与设备包装在一起 Lithium ion batteries packed with equipment	无要求 NIL	不受限制 Not restricted	包装说明966第II节 Section II of Packing Instructions 966
UN3481	锂离子电池安装在设备中 Lithium-ion batteries contained in equipment	无要求 NIL	不受限制 Not restricted	包装说明967第II节 Section II of Packing Instructions 967
UN3556	车辆，锂离子电池供电 Vehicle, lithium ion battery powered	无要求 NIL	第九类危险品 Class 9	包装说明952 Packing Instructions 952

海运，依据IMO IMDG Code (Amend 42-2024)

Maritime transportation, according to IMO IMDG Code (Amend 42-2024)

UN 编号 UN Number	正确的装运名称 Proper Shipping name	包装等级 Packaging Group	危险等级 Hazard Class	包装要求 Packaging requirement
UN3480	锂离子电池(包括锂离子聚合物电池) lithium ion batteries(including lithium polymer batteries)	无要求 NIL	不受限制 Not restricted	特殊规定188 Special provision 188
UN3481	锂离子电池与设备包装在一起 Lithium ion batteries packed with equipment	无要求 NIL	不受限制 Not restricted	特殊规定188 Special provision 188
UN3481	锂离子电池安装在设备中 Lithium-ion batteries contained in equipment	无要求 NIL	不受限制 Not restricted	特殊规定188 Special provision 188
UN3556	车辆，锂离子电池供电 Vehicle, lithium ion battery powered	无要求 NIL	第九类危险品 Class 9	特殊规定962 Special provision 962

15. 法规信息 Regulation information

法律信息

Law information

《危险物品规则》
《Dangerous Goods Regulations》(DGR)
《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》(IMDG)
《危险货物物品名表》
《List of dangerous goods》
《欧洲道路危险货物国际运输协议》
《European Agreement concerning the International Carriage of Dangerous Goods by Road》
《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)

根据所有联邦、州和地方法律。

In accordance with all Federal, State and local laws.

16. 其他信息 Other information

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Objections to the test report must be submitted to lab within 15 days.

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