



Report ID: MRIMT5BG4883607U3

2024 年 1 月 1 日生效

MSDS

Sample Name & Model Lithium manganese dioxide button battery CR2032
(3V 230mAh Aggregate lithium content: 0.062g)

Applicant SHENZHEN M&LAK INDUSTRY CO., LTD.

Address Room 201, Haigu Science And Technology Building T4,
Luozu Community, Shiyan Street, Baoan district, Shenzhen,
China

PONY 谱尼测试
Pony Testing International Group
www.ponytest.com



No.: MRIMT5BG4883607U3
Code: 6Gx21

声明 Statement

1. 本报告无检验检测专用章、报告骑缝章和批准人签章无效。
This report is invalid without special seal for inspection and test, cross-page seal and signature of the approver.
2. 本报告页面所使用“PONY”、“谱尼”字样为本单位的注册商标,其受《中华人民共和国商标法》保护,任何未经本单位授权的擅自使用和仿冒、伪造、变造“PONY”、“谱尼”商标均为违法行为,本单位将依法追究其法律责任。
The words "PONY" and "谱尼" used in this report page are the registered trademarks of the company, which are protected by the Trademark Law of the People's Republic of China. Any unauthorized use, counterfeiting, forging or altering of the trademarks of "PONY" and "谱尼" without the authorization of the company is an illegal infringement, and the company will investigate their legal liabilities according to law.
3. 委托单位对报告数据如有异议,请于报告完成之日起十五日内向本单位书面提出复测申请,同时附上报告原件并预付复测费。
If the applicant has any objection to the report data, please submit a written application for retesting to PONY within 15 days after the completion of the report, with the original report attached and the retesting fee prepaid.
4. 不可重复性或不能进行复测的实验,不进行复测,委托单位放弃异议权利。
If the experiment cannot be repeated or cannot be retested, no retest shall be conducted, and the applicant shall waive the right of objection.
5. 委托单位必须保证送至本公司的样品及资料与真实的出运货物相一致,如有不符,所涉及的法律及其他后果均由委托单位自行承担。
The client must guarantee that samples and documents provided for appraisal are consistent with the goods to be transported. Otherwise, the client shall bear all legal responsibilities and other consequences due to it.
6. 本报告仅对所测样品的检测结果负责,检测结果及其相关判定结论仅反映对所测样品的评价或只代表检测时污染物的排放状况。对于报告及所载内容不能进行商业广告宣传使用,使用所产生的直接或间接损失及一切法律后果,本单位不承担任何经济和法律后果。
This report is only responsible for the test results of the tested samples. The test results and relevant conclusions reflect the evaluation of the tested samples or only represent the emission status of pollutants during the test. The report and the contents contained in it cannot be used for commercial advertising, and PONY does not assume any economic and legal liabilities for direct or indirect losses and all legal consequences arising from the use.
7. 本单位有权在完成报告后按规定方式处理所测样品,除客户特别声明并支付样品管理费,所有超过标准规定时效期的样品均不再做留样。
PONY has the right to dispose the tested sample after approval of the test report. Unless the applicant specifically declares and pays the sample management fee, all samples beyond the validity period specified in the standard will not be retained.
8. 本单位保证工作的客观公正性,对委托单位的商业信息、技术文件等商业秘密履行保密义务。
PONY assures objectivity and impartiality of the test, and fulfills the obligation of confidentiality for applicant's commercial information, and technique document.
9. 本报告私自转让、盗用、冒用、涂改、未经本单位批准的复制(全文复制除外)或以其它任何形式的篡改均属无效,本单位将对上述行为追究其相应的法律责任。
Any unauthorized transfer, appropriation, falsification, alteration, copying (except full text copying) or alteration in any other form of this report without the approval of PONY shall be invalid. PONY shall strictly investigate the corresponding legal liability for the aforesaid behavior.
10. 本报告不考虑国家及经营人差异。
The certificate/report takes no account of the differences of countries and applicants.

▲ 防伪说明:

1. 报告编号是唯一的;
The report number is unique.
2. 扫描报告首页下方二维码或登录网站(<http://www.ponytest.com/>),即可查询报告真伪。
Scan the QR code below the first page or Log on to the website(<http://www.ponytest.com/>) to check the authenticity of the report.

 全国服务热线
400-819-5688
WWW.PONYTEST.COM



集团微信订阅号



集团微信服务号

| | | | |
|-------------------------|----------------------------|------------------------|------------------------------|
| 北京实验室:(010)83055000 | 郑州实验室:(0371)69350670 | 成都谱尼计量实验室(028)87702708 | 宁波实验室:(0574)87736499 |
| 北京谱尼科技公司:(010)80415661 | 郑州谱尼职业卫生公司:(0371)80967099 | 贵州实验室:(0851)85221000 | 合肥实验室:(0551)63843474 |
| 北京谱尼计量实验室:(010)82492998 | 新疆实验室:(0991)6684186 | 上海实验室:(021)64851999 | 深圳实验室:(0755)26050909 |
| 青岛实验室:(0532)88706866 | 石家庄实验室:(0311)85376660 | 苏州实验室:(0512)62997900 | 深圳谱尼计量实验室:(0755)26050909-846 |
| 天津实验室:(022)23607888 | 西安实验室:(029)89608785 | 苏州汽车座椅实验室及儿童安全座椅 | 谱尼深圳通测:(0755)27673339 |
| 长春实验室:(0431)80530198 | 西安创尼信息科技有限公司:(029)81123093 | 碰撞实验室:(0512)62997900 | 广州实验室:(020)89224310 |
| 沈阳实验室:(024)22811886 | 西安谱尼检测技术有限公司:(029)85729073 | 武汉实验室:(027)83997127 | 南宁实验室:(0771)5518818 |
| 大连实验室:(0411)87336618 | 呼和浩特实验室:(0471)3450025 | 武汉车附所:(027)82318175 | 厦门实验室:(0592)5568048 |
| 哈尔滨实验室:(0451)58627755 | 成都实验室:(028)87702708 | 杭州实验室:(0571)87219096 | |

Material Safety Data Sheet

Reference to ST/SG/AC.10/30/Rev.10 (GHS)

Section 1 - Chemical Product and Company Identification

Chemical Product Identification

Sample Name: Lithium manganese dioxide button battery

Sample Model: CR2032

Recommended Uses: N/A

Restrictions on Use: N/A

Supplier Name: SHENZHEN LIDEA BATTERY CO.,LTD.

Address: 3/F, No.5 Bldg., Houhai Xufa Tech.Park, No.8, Zhenxing Rd., Loucun, Gongming Town, Guangming District, Shenzhen City, Guangdong Province, China.

Phone Number: 0755-25179975

FAX: /

E-mail: yicheng@malak.cn

Emergency Phone Number: 0755-25179975

Section 2 - Hazards Identification

Emergency overview: This product is a battery. Intended use of the product should not result in exposure to the chemical substance. In case of rupture the below hazards exist.

Classification according to GHS

Acute toxicity, oral (4)

Acute toxicity, inhalation (4)

Skin corrosion/irritation (1A-1C)

Serious eye damage/eye irritation (1)

Sensitisation, skin (1, 1A, 1B)

Carcinogenicity (2)

Specific target organ toxicity, single exposure; Respiratory tract irritation (3)

Specific target organ toxicity, repeated exposure (2)

Label elements

Hazard pictogram(s):



Signal word:

Danger

Hazard statement(s):

H302 Harmful if swallowed
H332 Harmful if inhaled
H314 Causes severe skin burns and eye damage
H318 Causes serious eye damage
H317 May cause an allergic skin reaction
H351 Suspected of causing cancer
H335 May cause respiratory irritation
H373 May cause damage to organs through prolonged or repeated exposure

Precautionary statement(s):

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust, fume, gas, mist, vapours, spray.
P264 Wash skin and clothing thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves, protective clothing, eye protection, face protection.

Response:

P330 Rinse mouth.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P363 Wash contaminated clothing before reuse.
P310 Immediately call a POISON CENTER.
P321 Specific treatment (See additional emergency instructions).
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302 + P352 IF ON SKIN: Wash with plenty of water.

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Send contents to approved waste treatment plants.

Other hazards

Physical and chemical hazards: See Section 10

Human health hazards: See Section 11

Environmental hazards: See Section 12

Section 3 – Composition/Information on Ingredients

Chemical characterization: Mixture

| Chemical Composition | CAS No. | EC# | Weight (%) |
|---------------------------------|------------|-----------|------------|
| Manganese dioxide | 1313-13-9 | 215-202-6 | 31.7 |
| Graphite | 7782-42-5 | 231-955-3 | 2.6 |
| Polytetrafluoroethylene resin | 9002-84-0 | 618-337-2 | 0.3 |
| Polypropylene | 9003-07-0 | 618-352-4 | 3.9 |
| Stainless steel | 12597-68-1 | 603-108-1 | 48.8 |
| Lithium | 7439-93-2 | 231-102-5 | 2.0 |
| 1,2-Propanediolcyclic carbonate | 108-32-7 | 203-572-1 | 4.5 |
| Ethylene glycol dimethyl ether | 110-71-4 | 203-794-9 | 4.1 |
| Lithium Perchlorate | 7791-03-9 | 232-237-2 | 2.1 |

Section 4 - First Aid Measures

Description of first aid measures

General information No special measures required.

After eye contact

Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.

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.

After inhalation

Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

After swallowing

Do not induce vomiting. Get medical attention.

Personal protective equipment for first-aid responders: No data available.

Most important symptoms/effects, acute and delayed: No data available.

Indication of immediate medical attention and special treatment needed: Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable extinguishing media:

Small Fire: Dry chemical, soda ash, lime or sand. Large Fire: DRY sand, dry chemical, soda ash or lime or withdraw from area and let fire burn. Move containers from fire area if you can do it without risk.

Unsuitable extinguishing media:

Water or foam.

Specific Hazards arising from the chemical:

Special hazards arising from the substance or mixture

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

Produce flammable gases on contact with water. May ignite on contact with water or moist air. Some react vigorously or explosively on contact with water. May be ignited by heat, sparks or flames. May re-ignite after fire is extinguished. Runoff may create fire or explosion hazard.

Specific protective actions for fire-fighters:

Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6 - Accidental Release Measures

Personal precautions:

As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids. Keep unauthorized personnel away. Stay upwind, uphill and/or upstream. Ventilate the area before entry.

Protective equipment:

No data available.

Emergency procedures:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Stop leak if you can do it without risk. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. DO NOT GET WATER on spilled substance or inside containers. Small Spill: Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain. Dike for later disposal; do not apply water unless directed to do so. Powder Spill: Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.

Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Methods and materials for containment and cleaning up:

For all waste handling must refer to United Nations, National and Local Regulations for disposal.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Section 7 - Handling and Storage

Precautions for safe handling:

Avoid short circuiting the battery. Avoid mechanical damage of the battery. Do not open or disassemble. Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps.

Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well-ventilated place. Keep away from heat, avoiding the long time of sunlight.

Section 8 - Exposure Controls/Personal Protection

Control parameters

| CAS No. | ACGIH | NIOSH | OSHA |
|------------|----------------------------|------------------------------|------------------------------------|
| 1313-13-9 | N/A | N/A | N/A |
| 7782-42-5 | TLV-TWA 2mg/m ³ | REL-TWA 2.5mg/m ³ | PEL-TWA 15mppcf PEL-TWA 20mppcf |
| 9002-84-0 | N/A | N/A | N/A |
| 9003-07-0 | N/A | N/A | N/A |
| 12597-68-1 | N/A | N/A | N/A |
| 7439-93-2 | N/A | N/A | N/A |
| 108-32-7 | N/A | N/A | N/A |
| 110-71-4 | N/A | N/A | N/A |
| 7791-03-9 | N/A | N/A | N/A |

Appropriate engineering controls:

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.

Personal Protective Equipment:

Respiratory protection: Wear suitable protective mask. For a large large number of battery

leakages, wear chemical protective clothing, including self-contained breathing apparatus.

Hand Protection: Wear appropriate protective gloves to reduce skin contact.

Eye Protection: Wear safety goggles or eye protection combined with respiratory protection.

Skin and Body Protection: Working environment required, wear suitable protective clothing to minimize contact with skin. The type of protective equipment must be according to the concentration and the content of certain hazardous substances in the workplace.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

| | |
|---|----------------|
| Colour: | Silver. |
| Physical State: | Button. |
| Odour: | Not available. |
| pH: | Not available. |
| Melting point/freezing point: | Not available. |
| Boiling point or initial boiling point and boiling range: | Not available. |
| Flash Point: | Not available. |
| Flammability: | Not available. |
| Solubility: | Not available. |
| Lower and upper explosion limit/flammability limit: | Not available. |
| Auto-ignition temperature: | Not available. |
| Decomposition temperature: | Not available. |
| Kinematic viscosity: | Not available. |
| Partition coefficient: n-octanol/water (log value): | Not available. |
| Vapour pressure: | Not available. |
| Density and/or relative density: | Not available. |
| Relative vapour density: | Not available. |
| Particle characteristics: | Not available. |
| Other information: | |
| Voltage | 3V |
| Electric capacity | 230mAh |
| Aggregate lithium content | 0.062g |

Section 10 - Stability and Reactivity

Reactivity: No data available.

Chemical stability: Stable.

Possibility of hazardous reactions: No data available.

Conditions to Avoid: Flames, sparks, and other sources of ignition, incompatible materials.

Incompatible materials: Oxidizing agents, acid base.

Hazardous decomposition products: Carbon monoxide, carbon dioxide, lithium oxide fumes.

Section 11 - Toxicological Information

Acute Toxicity:

| CAS No. | LC50/LD50 |
|------------|---|
| 1313-13-9 | No data available. |
| 7782-42-5 | No data available. |
| 9002-84-0 | No data available. |
| 9003-07-0 | No data available. |
| 12597-68-1 | No data available. |
| 7439-93-2 | No data available. |
| 108-32-7 | LD50 Rat (oral): $\geq 29000\text{mg/kg}$; LD50 Rabbit (Dermal): $> 20000\text{mg/kg}$ |
| 110-71-4 | LD50 Rat (oral): 2525mg/kg |
| 7791-03-9 | No data available. |

Skin corrosion/irritation: No data available.

Serious eye damage/irritation: No data available.

Respiratory or Skin sensitization: No data available.

Germ Cell mutagenicity: No data available.

Carcinogenicity: No data available.

Reproductive toxicity: No data available.

Specific target organ toxicity-Single exposure: No data available.

Specific target organ toxicity-Repeated exposure: No data available.

Aspiration hazard: No data available.

Information on the likely routes of exposure: No data available.

Eye: No data available.

Skin: No data available.

Ingestion: No data available.

Inhalation: No data available.

Section 12 - Ecological Information

Ecological Toxicity: No data available.

Persistence and degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

Section 13 - Disposal Considerations

Disposal methods:


Recommendation:

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packaging

Recommendation: Disposal must be made according to official regulations.

Section 14 - Transport Information

| | |
|---|---|
| UN or ID Number | |
| IATA | UN3090 |
| IMDG | UN3090 |
| Model Regulation | UN3090 |
| Proper Shipping Name/Description | |
| IATA | Lithium metal batteries |
| IMDG | LITHIUM METAL BATTERIES |
| Model Regulation | LITHIUM METAL BATTERIES |
| Class or Div. (Sub Hazard) | |
| IATA | 9 |
| Packing Group | |
| IATA | N/A |
| IMDG | N/A |
| Model Regulation | N/A |
| Hazard Label | |
| IATA |  |
| IMDG | N/A |
| Model Regulation | N/A |
| Environmental hazards | |
| Marine pollutant: | No |
| IMDG EmS: | F-A. S-I |
| Special precautions for user | No information available. |

Transport information: The Lithium manganese dioxide button battery CR2032 has passed the test UN38.3, according to the report ID: MPIQBShL767767U5.

According to the Packing Instruction 968 section IB of IATA DGR 65th Edition for transportation, Cargo aircraft only.

According to the special provision 188 of IMDG (41-22) or the special provision 188 of <<Recommendations On The Transport Of Dangerous Goods-Model Regulations>> (23rd), the goods are not subject to other provision of this code.

Separate batteries to prevent short-circuiting. and they should be packed in strong package during transport. Lithium cell or battery should incorporate a safety venting device or be designed to prevent a violent rupture under normal transport conditions. Keep away from high temperature and open flames.

Transport Fashion: By air, by sea, by railway, by road.

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

| CAS No. | TSCA | IECSC | DSL/NDSL | EINECS/ ELINCS/ NLP |
|------------|--------|--------|------------|---------------------|
| 1313-13-9 | Listed | Listed | Listed DSL | Listed |
| 7782-42-5 | Listed | Listed | Listed DSL | Listed |
| 9002-84-0 | Listed | Listed | Listed DSL | Listed |
| 9003-07-0 | Listed | Listed | Listed DSL | Listed |
| 12579-68-1 | Listed | Listed | Listed DSL | Listed |
| 7439-93-2 | Listed | Listed | Listed DSL | Listed |
| 108-32-7 | Listed | Listed | Listed DSL | Listed |
| 110-71-4 | Listed | Listed | Listed DSL | Listed |

Section 16 - Other Information

Issue Date: 2023-12-01

Issue Department: Technical department

Modification record:

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Other Information:

CAS: (Chemical Abstracts Service);

EC: (European Commission);

ACGIH: (American Conference of Governmental Industrial Hygienists);

NIOSH: (US National Institute for Occupational Safety and Health);

OSHA: (US Occupational Safety and Health);

TLV: (Threshold Limit Value)

TWA: (Time Weighted Average);

STEL: (Short Term Exposure Limit);

PEL: (Permissible Exposure Level);

REL: (Recommended Exposure Limit);

PC-STEL: (Permissible concentration-short time exposure limit);

PC-TWA: (Permissible concentration-time weighted average);

IARC: (International Agency for Research on Cancer);

LC50: (Lethal concentration, 50 percent kill);

LD50: (Lethal dose, 50 percent kill);

EC50: (Median effective concentration);

BCF: (Bioconcentration Factor);

BOD: (Biochemical oxygen demand);

IECSC: (Inventory of Existing Chemical Substances in China);

NOEC: (No observed effect concentration);

NTP: (US National Toxicology Program);

RTECS: (Registry of Toxic Effects of Chemical Substances);

TOC: (Total Organic Carbon);

TSCA: (Toxic Substances Control Act of USA);

DSL: (the Domestic Substances List of Canada);

NDSL: (the Non-domestic Substances List of Canada);

IATA: (International Air Transport Association);

IMDG: (International Maritime Dangerous Goods);

TDG: (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations)

Approver: *Chunmei Zhang*

End of report