

## Beiblatt zum Sicherheitsdatenblatt / Supplement to the safety data sheet

### Abschnitt 1 / Section 1

#### 1.1 Produktidentifikation / Product identification

s. Original-Datenblatt / see original safety data sheet

#### 1.2 Verwendungen des Stoffs / Uses of the substance

s. Original-Datenblatt / see original safety data sheet

#### 1.3 Einzelheiten zum Lieferanten / Details of the supplier

Firmenname /	Supplier	Stürmer Maschinen GmbH,
Straße /	Street	Dr.-Robert-Pfleger-Str. 26,
Ort /	City	D-96103 Hallstadt
Tel. /	Phone	+49 (0)951 96555 - 0 (07:00 - 17:00 Uhr / 07:00 am - 05:00 pm)
E-Mail /	E-Mail	info@stuermer-maschinen.de

#### 1.4 Notrufnummer / Emergency Telephone

Wählen Sie die passende Notrufnummer anhand des GHS-Symbols auf Ihrem Gefahrgut oder entsprechend Abschnitt 2.2 des orig. Sicherheitsdatenblattes \*.  
Call the appropriate emergency number using the GHS symbol on your dangerous goods or according to section 2.2 of the original safety data sheet \*.

GHS Gefahren-piktogramm / GHS symbol	GHS-Kürzel/ GHS-no.	Mögliche Signalwörter/ Warning	Gefährdungsklassen / Description of hazards	Notrufnummer */ Emergency Phone *
	GHS01 bis GHS09			+49 (0)951 96555 - 590 Sammelnotrufnummer Gefahrstoffe
	GHS01	Gefahr oder Achtung / Danger or Attention	Explosive Stoffe/Gemische und Erzeugnisse mit Explosivstoff, selbstzersetzliche Stoffe/Gemische, organische Peroxide / Explosive substances / mixtures and products containing explosives, self-reactive substances / mixtures, organic peroxides	- 591
	GHS02	Gefahr oder Achtung / Danger or Attention	Selbstzersetzliche Stoffe/Gemische, organische Peroxide, entzündbare Gase, Aerosole Flüssigkeiten, Feststoffe, selbsterhitzungsfähige Gemische, pyrophore Flüssigkeiten und Feststoffe, Stoffe/Gemische, die bei Berührung mit Wasser entzündbare Gase bilden / Self-reactive substances / mixtures, organic peroxides, flammable gases, aerosols, liquids, solids, self-heating mixtures, pyrophoric liquids and solids, substances / mixtures which form flammable gases on contact with water	- 592
	GHS03	Gefahr oder Achtung / Danger or Attention	Oxidierende Gase, Flüssigkeiten, Feststoffe / Oxidizing gases, liquids, solids	- 593
	GHS04	Achtung / Attention	Verdichtete, verflüssigte, gelöste und tiefgekühlt verflüssigte Gase / Compressed, liquefied, dissolved and refrigerated liquefied gases	- 594
	GHS05	Gefahr oder Achtung / Danger or Attention	Verätzung der Haut, schwere Augenschäden, auch metallkorrosive Eigenschaften / Chemical burns to the skin, severe eye damage, also metal-corrosive properties	- 595
	GHS06	Gefahr / Danger	Äußerst schwere und schwere akute Gesundheitsschäden oder Tod / Extremely severe and severe acute damage to health or death	- 596
	GHS07	Achtung / Attention	Akute Gesundheitsschäden, Reizung der Haut, der Augen und der Atemwege, Sensibilisierung der Haut, narkotisierende Wirkungen / Acute damage to health, irritation of the skin, eyes and the respiratory tract, sensitization of the skin, narcotic effects	- 597
	GHS08	Gefahr oder Achtung / Danger or Attention	Chronische Gesundheitsschäden (Organschädigungen) bei einmaliger oder mehrmaliger Exposition, krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkungen, Lungenschäden durch Eindringen von Substanzen in die Lunge (Aspirationsgefahr), Sensibilisierung der Atemwege / Chronic damage to health (damage to organs) after single or multiple exposure, carcinogenic, mutagenic and reproductive effects, lung damage due to the penetration of substances into the lungs (risk of aspiration), sensitization of the respiratory tract	- 598
	GHS09	Achtung oder ohne Signalwort/ Attention or without wording	Giftig für Wasserorganismen mit kurz- und langfristiger Wirkung / Toxic to aquatic organisms with short and long-term effects	- 599

\* 07:00 - 17:00 Uhr, außerhalb dieses Zeitraums kann die Nummer auf dem Sicherheitsdatenblatt angerufen werden / 07:00 am - 05:00 pm, outside this time, the number on the safety data sheet can be called

Für alle anderen Informationen siehe Original-Sicherheitsdatenblatt / For all other information, see the original safety data sheet



Report ID: MTILF4NG7802727U3

2026 年 1 月 1 日生效

# MSDS

Sample Name Lithium manganese dioxide button battery CR2032  
& Model (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



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”字样为谱尼测试集团的注册商标，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”商标均为违法侵权行为，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 Pony Testing International Group, 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(Anti-counterfeiting Instructions):

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，即可查询报告真伪。  
Scan the QR code below the first page to check the authenticity of the report.
3. 报告采用特制防伪纸张印制，纸张表面带有“PONY”防伪纹路，该防伪纹路不支持复印，即复制件不会带有“PONY”防伪纹路。  
The report is printed on specially made anti-counterfeit paper with the "PONY" anti-counterfeit pattern on the surface of the paper. This anti-counterfeit pattern does not support copying, meaning that the copied product will not have the "PONY" anti-counterfeit pattern.
4. 报告采用的防伪纸张内部亦加带有高科技“PONY”防伪水印，只有在验钞机等紫外线照射下方可显出无色荧光防伪字样。  
The anti-counterfeit paper used in the report also has a high-tech "PONY" anti-counterfeit watermark added inside, and the colorless fluorescent anti-counterfeit words can only be displayed under UV irradiation such as in the cash detector.

\*\*\*\*\*

## Material Safety Data Sheet

Reference to ST/SG/AC.10/30/Rev.11 (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:** Lidea-Malak Tech. Park, No. 249 Lidu Rd., Lihu Community, Xinhua Subdistrict, 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 (1)

Serious eye damage/eye irritation (1)

Sensitisation, skin (1)

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.  
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	12-50
Lithium	7439-93-2	231-102-5	0.5-6
Ethylene glycol dimethyl ether	110-71-4	203-794-9	1.5-3.5
Lithium Perchlorate	7791-03-9	232-237-2	0.2-0.7
1,2-Propanediolcyclic carbonate	108-32-7	203-572-1	2.5-7
Stainless steel	12597-68-1	603-108-1	30-85
Polypropylene	9003-07-0	618-352-4	0.5-10

### 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
7439-93-2	N/A	N/A	N/A
110-71-4	N/A	N/A	N/A
7791-03-9	N/A	N/A	N/A
108-32-7	N/A	N/A	N/A
12597-68-1	N/A	N/A	N/A
9003-07-0	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.
7439-93-2	No data available.
110-71-4	LD50 Rat (oral): 2525mg/kg
7791-03-9	No data available.
108-32-7	LD50 Rat (oral): ≥29000mg/kg; LD50 Rabbit (Dermal): >20000mg/kg
12597-68-1	No data available.
9003-07-0	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

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

**Transport information:** The Lithium manganese dioxide button battery CR2032 has passed the test UN38.3, according to the report ID: MSIMOD5G6681867U5.

According to the Packing Instruction 968 section IB of IATA DGR 67<sup>th</sup> Edition for transportation, Cargo aircraft only.

According to the special provision 188 of IMDG(42-24), 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.

## 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
7439-93-2	Listed	Listed	Listed DSL	Listed
110-71-4	Listed	Listed	Listed DSL	Listed
7791-03-9	Listed	Listed	Listed DSL	Listed
108-32-7	Listed	Listed	Listed DSL	Listed
12597-68-1	Listed	Listed	Listed DSL	Listed
9003-07-0	Listed	Listed	Listed DSL	Listed

## Section 16 - Other Information

Issue Date: 2025-12-05

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: *Zhang Chunmei*

\*\*\*End of report\*\*\*

