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PONY
Pony Testing International Group

Report No.: MPI5XL7L816037U3

MSDS Report

Sample Name & Model	Li-MnO_2 Button cell CR2032
Applicant	Liyuan Battery Technology (Shenzhen) Co. LTD
Address	Building B, Gushu Hongwan Joint Stock Company, Sanwei Community, Hangcheng Street, Baoan District, Shenzhen

No.: MPI5XL7L816037U3
Code: 1iPEx3

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Pony Testing International Group

Material Safety Data Sheet

Reference to ST/SG/AC.10/30/Rev.9 (GHS)

Section 1 - Chemical Product and Company Identification

Chemical Product Identification

Sample Name: Li-MnO_2 Button cell

Sample Model: CR2032

Recommended Uses: N/A

Restrictions on Use: N/A

Supplier Name: Liyuan Battery Technology (Yichun) Co. LTD

Address: 166, Food Avenue, Shanggao County Industrial Park, Yichun City, Jiangxi

Phone Number: 13554721711

FAX: 0755-29887011

E-mail: xuliqing@liyuancell.com

Emergency Phone Number: 0755-29887011

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 (%)
Stainless steel	12597-68-1	603-108-1	49.66
Manganese dioxide	1313-13-9	215-202-6	30.99
Carbon black	1333-86-4	215-609-9	2.17
Graphite	7782-42-5	231-955-3	2.17
Polytetrafluoroethylene resin	9002-84-0	618-337-2	0.77
Lithium	7439-93-2	231-102-5	2
Lithium Perchlorate	7791-03-9	232-237-2	4
1,2-Propanediolcyclic carbonate	108-32-7	203-572-1	3
Ethylene glycol dimethyl ether	110-71-4	203-794-9	1.48
Polypropylene	9003-07-0	618-352-4	3.76

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 handing 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
12597-68-1	N/A	N/A	N/A
1313-13-9	N/A	N/A	N/A
1333-86-4	TLV-TWA 3mg/m^3	REL-TWA 3.5mg/m^3	PEL-TWA 3.5mg/m^3
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
7439-93-2	N/A	N/A	N/A
7791-03-9	N/A	N/A	N/A
108-32-7	N/A	N/A	N/A
110-71-4	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	3.0V

Electric capacity	220mAh
Aggregate lithium content	0.06g

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
12597-68-1	No data available.
1313-13-9	No data available.
1333-86-4	No data available.
7782-42-5	No data available.
9002-84-0	No data available.
7439-93-2	No data available.
7791-03-9	No data available.
108-32-7	LD50 Rat (oral): ⩾29000mg/kg; LD50 Rabbit (Dermal): >20000mg/kg
110-71-4	LD50 Rat (oral): 2525mg/kg
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:

CAS# 108-32-7

LC50: >1000 mg/L - Fish (Carp) - 96h;

EC50: >1000 mg/L - Crustaceans (Daphnia magna) - 48h;

EC50: >900 mg/L - Algae (Scenedesmus subspicatus) - 72h

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
Proper Shipping Name/Description	
IATA	Lithium metal batteries
IMDG	LITHIUM METAL BATTERIES

Class or Div. (Sub Hazard)	
IATA	9
Packing Group	
IATA	N/A
IMDG	N/A
Hazard Label	
IATA	
IMDG	N/A
Environmental hazards	
Marine pollutant:	No
IMDG EmS:	F-A. S-I
Special precautions for user	No information available.

Transport information: The Li-MnO_2 Button cell CR2032 has passed the test UN38.3, according to the report ID: MPI83PTL733867U5

According to the Packing Instruction 968 section IB of IATA DGR 63rd Edition for transportation, Cargo aircraft only.

According to the special provision 188 of IMDG (40-20), 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
12597-68-1	Listed	Listed	Listed DSL	Listed
1313-13-9	Listed	Listed	Listed DSL	Listed

1333-86-4	Listed	Listed	Listed DSL	Listed
7782-42-5	Listed	Listed	Listed DSL	Listed
9002-84-0	Listed	Listed	Listed DSL	Listed
7439-93-2	Listed	Listed	Listed DSL	Listed
7791-03-9	Listed	Listed	Listed DSL	Listed
108-32-7	Listed	Listed	Listed DSL	Listed
110-71-4	Listed	Listed	Listed DSL	Listed
9003-07-0	Listed	Listed	Listed DSL	Listed

Section 16 - Other Information

Issue Date: 2022-01-04

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);

End of report