

Lithium Metal Cell

Safety Data Sheet

according to the Hazardous Products Regulation (February 11,
2015) Date of issue: 01/01/2024

Version: 1.0

SECTION 1: Identification

1.1. Product identifier

Product name : Lithium Metal Cell
Product code : CR2032

1.2. Recommended use and restrictions on use

Recommended use : Battery

1.3. Supplier

Changzhou Yufeng Electrical
Industrial Zone Xilin, Zhonglou District
Changzhou, Jiangsu, 213024
T 011 86 519-83885169

Distributor
Tenacious Holdings Inc., dba Ergodyne
1021 Bandana Boulevard East Suite 220
Saint Paul, MN 55108
T 651-642-9889

1.4. Emergency telephone number

Emergency number : 1-800-535-5053 or 1-352-323-3500

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

The classification given below is designated for battery acid and lithium/lithium compounds only:

Classification (GHS-CA)

Acute Tox. 4 (Inhalation:dust,mist)	H332
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
STOT RE 1	H372

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms (GHS-CA) :



GHS07



GHS08

Signal word (GHS-CA) : Danger

Hazard statements (GHS-CA) : H332 - Harmful if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-CA) : P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P264 - Wash hands, forearms and face thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - IF ON SKIN: Wash with plenty of water
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor if you feel unwell
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-CA)

37% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

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3.2. Mixtures

Name	Product identifier	%
Manganese oxide (MnO ₂)	(CAS-No.) 1313-13-9	28
Ethylene glycol dimethyl ether	(CAS-No.) 110-71-4	3.6
Lithium	(CAS-No.) 7439-93-2	2.2
Perchloric acid, lithium salt	(CAS-No.) 7791-03-9	1.1

This SDS is designated for battery acid and lithium compounds only

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
- First-aid measures after skin contact : IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after inhalation : Harmful if inhaled. May cause irritation to the respiratory tract.
- Symptoms/effects after skin contact : Causes skin irritation. May cause burns. Symptoms may include redness, drying, defatting and cracking of the skin.
- Symptoms/effects after eye contact : Causes serious eye irritation. May cause burns. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3. Immediate medical attention and special treatment, if necessary

- Other medical advice or treatment : Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

- Suitable extinguishing media : ABC-powder, carbon dioxide (CO₂), Dry sand. Use extinguishing media appropriate for surrounding fire.

5.2. Unsuitable extinguishing media

- Unsuitable extinguishing media : None known.

5.3. Specific hazards arising from the hazardous product

- Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.
- Explosion hazard : Do not dispose of battery in fire – may explode. Do not short-circuit battery – may cause burns.

5.4. Special protective equipment and precautions for fire-fighters

- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and materials for containment and cleaning up

- For containment : Stop leak if safe to do so. Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.
- Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Avoid direct contact with electrolyte. Provide ventilation.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not breathe dust, fume, gas, mist, spray, vapours. Avoid contact with skin and eyes. Keep away from combustible materials. Do not swallow. Use only outdoors or in a well-ventilated area. Do not put in backward position. Do not store in disorderly fashion or allow metal objects to be mixed with stored batteries. Do not disassemble the battery.
- Hygiene measures : Take off contaminated clothing and wash it before reuse. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep out of the reach of children. Store in a dry, cool and well-ventilated place. Store locked up. Store in corrosive resistant container with a resistant inner liner.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Batteries that are leaking should be handled with rubber gloves.

Eye protection:

Wear eye/face protection

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Other information:

Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : No data available
- Colour : No data available
- Odour : No data available
- Odour threshold : No data available
- pH : No data available
- Relative evaporation rate (butylacetate=1) : No data available
- Relative evaporation rate (ether=1) : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : Not flammable
- Vapour pressure : No data available
- Vapour pressure at 50 °C : No data available
- Relative density : No data available
- Solubility : No data available
- Partition coefficient n-octanol/water : No data available
- Viscosity, kinematic : No data available

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Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity : No dangerous reactions known under normal conditions of use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No dangerous reactions known under normal conditions of use.
Conditions to avoid : Heat. Humidity.
Incompatible materials : None known.
Hazardous decomposition products : May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified.
Acute toxicity (dermal) : Not classified.
Acute toxicity (inhalation) : Harmful if inhaled.

ATE CA (dust,mist)	1.50000000 mg/l/4h
Unknown acute toxicity (GHS-CA)	37% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

Manganese oxide (MnO₂) (1313-13-9)

LD50 oral rat : 9000 mg/kg

Ethylene glycol dimethyl ether (110-71-4)

LD50 oral rat : > 4000 mg/kg
LD50 dermal rabbit : 1000 - 2000 mg/kg
LC50 inhalation rat : 20 - 63 mg/l (Exposure time: 6 h)

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified.
Germ cell mutagenicity : Not classified.
Carcinogenicity : Not classified.
Reproductive toxicity : Not classified.
STOT-single exposure : Not classified.
STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard : Not classified.
Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.
Symptoms/effects after inhalation : Harmful if inhaled. May cause irritation to the respiratory tract.
Symptoms/effects after skin contact : Causes skin irritation. May cause burns. Symptoms may include redness, drying, defatting and cracking of the skin.
Symptoms/effects after eye contact : Causes serious eye irritation. May cause burns. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

Lithium Metal Cell	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Lithium Metal Cell	
Bioaccumulative potential	Not established.

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Manganese oxide (MnO ₂) (1313-13-9)	
BCF fish 1	(no bioaccumulation expected)
Partition coefficient n-octanol/water	< 0 (at 20 °C)

12.4. Mobility in soil

Manganese oxide (MnO ₂) (1313-13-9)	
Partition coefficient n-octanol/water	< 0 (at 20 °C)

12.5. Other adverse effects

Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. Do not incinerate or subject cells to temperature in excess of 80°C.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

Transportation of Dangerous Goods

UN-No. (TDG) : UN3090
TDG Primary Hazard Classes : Not restricted
Transport document description : UN3090 LITHIUM BATTERIES, 9
Proper Shipping Name (Transportation of Dangerous Goods) : LITHIUM BATTERIES

14.2. Transport information/DOT

No additional information available

14.3. Air and sea transport

No additional information available

SECTION 15: Regulatory information

15.1. National regulations

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories.

15.2. International regulations

No additional information available

SECTION 16: Other information

Date of issue : 01/01/2024

Other information : None.

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