

Primary (non-rechargeable) Lithium Battery

Safety Data Sheet



Section 1. Identification of the material and the supplier

Product: **Primary (non-rechargeable) Lithium Battery (701064635)**
Nominal Voltage: 3.0 volts
Models: Coin Type Cells CR Series
Chemical System: **Lithium Manganese Dioxide** (Li + MnO₂ - LiMnO₂)
Primary **NOT** designated for Recharge

ANZ Distributor:	Getinge Australia	Getinge Australia (NZ Branch)
Address	11 Help Street Level 7, Suite 701 Chatswood NSW 2067 AUS	600 Great South Road Building B, Level 2 Ellerslie, Auckland, 1051 NZ
Telephone	1800 438 464	0800 1 438 4643

Emergency Telephone: **AUS +61 2 8014 4558**
NZ +64 9 929 1483 or **0800 764 766** (National Poison Centre)

Date of SDS Preparation: 13 June 2023

Section 2. Hazards Identification

This substance is NOT hazardous according to the EPA Hazardous Substances (Classification) Notice 2020 - This product is considered as a Manufactured Article.

The classification based on the hazardous substances contained in the product (electrode materials and liquid electrolyte contained in the batteries) is provided below for information purposes only.



Eye Dam. 1	H318: Causes serious eye damage
Skin Irrit. 2	H315: Causes skin irritation
Acute Tox. 4	H302: Harmful if swallowed
Acute Tox. 4	H332: Harmful if inhaled
STOT RE 2	H373: May cause damage to organs (Brain) through prolonged or repeated exposure (Inhalation)
Repr. 1B	H360 FD: May damage fertility. May damage the unborn child.
Water-react. 1	H260: In contact with water releases flammable gases which may ignite Spontaneously

Keep out of reach of children.

Other hazards which do not result in classification

The chemicals mentioned in Section 3 are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused or if it is ingested (see Safety precautions in Section VII). Swallowing of a battery can lead to chemical burns, perforation of soft tissues and death. Severe burns can occur within 2 hours of ingestion. In case of ingestion, seek medical attention immediately.

Section 3. Composition / Information on Ingredients

MATERIAL OR INGREDIENTS	Content (wt %)	CAS #
Manganese Dioxide (MnO ₂)	12 - 50	1313-13-9
Lithium*	1.1 - 3.3	7439-93-2
Propylene Carbonate (PC)	2 - 9	108-32-7
1,2 dimethoxy ethane (DME)**	1 - 3.5	110-71-4
Lithium Perchlorate (LiClO ₄)	0.2 - 0.8	7791-03-9

Section 4. First Aid Measures

The material in this section may only represent a hazard if the integrity of the battery is compromised, or if the battery is physically or electrically abused.

If in Eyes	Contents of an opened battery causes serious eye damage, flush immediately thoroughly with copious amounts of water for at least 15 minutes. Get medical attention immediately.
If on Skin	Skin contact with contents of an opened battery causes irritation, flush immediately with copious amounts of water. Remove contaminated clothing. If irritation persists, get medical help.
If Swallowed	If swallowed, obtain medical attention immediately.
If Inhaled	Do not inhale leaked material. Provide immediately fresh air, if irritation persists, get medical help.

Most important symptoms and effects, both acute and delayed

The chemicals mentioned in Section 3 are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused or if it is ingested (see Safety precautions in Section VII). Swallowing of a battery can lead to chemical burns, perforation of soft tissues and death. Severe burns can occur within 2 hours of ingestion. In case of ingestion, seek medical attention immediately.

In case of exposure to inner component/material of the battery:

Harmful if swallowed (Manganese Dioxide)

Harmful if inhaled (Manganese Dioxide, DME)

May cause damage to organs (Brain) through prolonged or repeated exposure (Inhalation) (Manganese Dioxide) May damage fertility. May damage the unborn child. (DME)

Section 5. Fire Fighting Measures

Hazard Type	Cell is not flammable but internal organic material will burn if the cell is incinerated.
Hazards from products	When exposed to heat, the battery may rupture and release hazardous substances. Burning lithium manganese dioxide batteries produce toxic and corrosive lithium hydroxide fumes. Lithium metal reacts with water and forms flammable hydrogen gas.
Suitable Extinguishing media	In case of fire in an adjacent area, use water. Use CO ₂ or dry chemical extinguishers if cells are packed in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged cells use for example LITH-X (Graphite Base). In this case, do not use water. In a small room, remember that the supply of oxygen is quickly consumed in feeding a lithium fire.

Precautions for firefighters and special protective clothing	Wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products. Wear protective clothing and equipment.
HAZCHEM CODE	4Y

Section 6. Accidental Release Measures

Steps to be taken in case material is released or spilled:

The preferred response is to leave the area and allow the batteries to cool and the vapours to dissipate. Avoid skin and eye contact or inhalation of vapours.

Do not allow product to reach sewage system or any water course.

In the event of spill or accidental release, collect all released material in a plastic lined metal container and remove spilled liquid with absorbent. Doing this, protect your skin and eyes with chemical resistant protective gloves (EN374) and tightly sealed protective goggles (EN166). Avoid direct contact with internal components.

Section 7. Handling and Storage

Precautions for Handling:

- Do not insert batteries in reverse. Observe the polarity markings on battery and equipment.
- Do not short-circuit batteries.
- Do not charge batteries.
- Do not force discharge batteries.
- Do not mix batteries.
- Do not overheat batteries by exposure to high temperatures and direct sunlight.
- Do not weld or solder directly to batteries
- Do not dismantle batteries
- Do not deform batteries.
- Do not dispose of batteries in fire.
- A battery with a damaged container should not be exposed to water.
- Do not allow children to replace batteries without adult supervision.
- Keep batteries out of the reach of children. In case of ingestion of a cell or battery, the person involved should seek medical assistance promptly.
- Equipment intended for use by children should have battery compartments which are tamper-proof.
- Do not encapsulate and/or modify batteries.
- Exhausted batteries should be immediately removed from equipment and disposed of (see section 13).
- When discarding batteries with solder tags, insulate the tags by wrapping them with tape, foil, etc.

Precautions for Storage:

- Store unused batteries in their original packaging and keep them away from metal objects which may short-circuit them. Storing unpackaged cells together could result in cell shorting and heat build-up.
- Store and display batteries in their original packaging in well ventilated, dry and cool conditions.
- Avoid storing or display batteries in direct sun or in places where they get exposed to rain.
- The normal storage of lithium coin cells is made at temperature between +10°C and +25°C, never exceeding +30°C (also according to IEC 60086-4). In this way the maximum shelf-life (i.e. max. retention of cell performances after storage periods) of lithium coin cells is achieved. Storage temperatures above room temperature will increase the rate of self-discharge, reducing the available capacity of the cell. Humidity above 95% R.H. and below 40% R.H. should also be avoided for sustained periods, as these extremes are detrimental to batteries. Storing the cells at low temperature is also

suggested, but attention must be paid when transferring the cells to warmer environments, because of the possibility of having water condensing on to the cells (risk of short-circuits).

- Do not stack battery cartons on top of each other exceeding a specified height. The height is clearly dependent on the strength of the packaging. As for general rule this height should not exceed 1.5 m for cardboard packages or 3 m for wooden cases. The above recommendations are equally valid for storage conditions during prolonged transit. Thus, batteries should be stored away from ship engines and not left for long periods in unventilated metal box cars (containers) during summer.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA		STEL	
	ppm	mg/m ³	ppm	mg/m ³

No ingredients have exposure limits

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices APRIL 2022 13TH EDITION.

Engineering Controls

Ventilation is not necessary under conditions of normal use. Avoid contact with water.

Personal Protection Equipment:

In case of exposure to inner component/material (i.e. when handling damaged batteries), protect your skin and eyes with chemical resistant protective gloves (EN374) and tightly sealed protective goggles (EN166).

Eyes	Not necessary under conditions of normal use.
Hands	Not necessary under conditions of normal use.
Respiratory	Not necessary under conditions of normal use.

Section 9 Physical and Chemical Properties

Appearance	Solid
Colour	according to product specifications
Odour	Not available
Odour Threshold	Not available
pH (typical)	Not available
Boiling Point	Not available
Melting Point	Not available
Freezing Point	Not available
Flash Point	Flash point of electrolyte solvents (°C): DME: -6°C, PC: 123°C, Mixture: 20°C
Flammability	Not available
Upper and Lower Explosive Limits	Not available
Vapour Pressure	Not available
Vapour Density	Not available
Relative Gas Density	Not available
Decomposition Temp	No decomposition under normal conditions of use
Water Solubility	Insoluble
Partition Coefficient:	Not available

Product Name: **Primary (non-rechargeable) Lithium Battery** SDS Prepared by: Technical Compliance Consultants
Date of SDS: 13 June 2023 Tel: 64 9 475 5240 www.techcomp.co.nz

Auto-ignition Temperature	Not available
Viscosity	Not available
Particle Characteristics	Not available

Section 10. Stability and Reactivity

Lithium batteries are contained in a stable steel container and are sealed to avoid any chemical release under conditions of normal use.

Stability of Substance	This product is stable under normal conditions.
Possibility of hazardous reactions	No reactions if article is used according to specifications.
Conditions to Avoid	Refer to Section 7.
Incompatible Materials	Refer to Section 7.
Hazardous Decomposition Products	No decomposition if article is used according to specifications.

Section 11 Toxicological Information

The chemicals mentioned in Section 3 are contained in a sealed can.
 Risk of exposure occurs only if the battery is mechanically or electrically abused or if it is ingested (see safety precautions in section 7).
 Classification based on the hazardous substances contained in the product (electrode materials and electrolyte solution contained in the batteries):

Acute Effects:

Swallowed	Harmful if swallowed (Manganese Dioxide). Swallowing of a battery can lead to chemical burns, perforation of soft tissues and death. Severe burns can occur within 2 hours of ingestion. In case of ingestion, seek medical attention immediately.
Dermal	Does not contain any ingredients classified as acutely toxic.
Inhalation	Harmful if inhaled (Manganese Dioxide, DME)
Eye	Causes serious eye damage (Lithium)
Skin	Causes skin irritation (Lithium)

Chronic Effects:

Carcinogenicity	Does not contain any ingredients classified as carcinogenic.
Reproductive Toxicity	Does not contain any ingredients classified as toxic for reproduction.
Germ Cell Mutagenicity	Does not contain any ingredients classified as mutagenic.
Aspiration	Does not contain any ingredients classified as Asp Tox.
STOT/SE	Does not contain any ingredients classified as STOT SE.
STOT/RE	May cause damage to organs (Brain) through prolonged or repeated exposure (Inhalation) (Manganese Dioxide)

Section 12. Ecotoxicological Information

Aquatic toxicity: Based on classification of ingredients, the classification criteria are not met.

Product:	
Persistence and degradability	Not biodegradable.
Bioaccumulation	No data available
Mobility in Soil	No data available
Other adverse effects	No data available

Section 13. Disposal Considerations

Disposal Method:

Lithium batteries are neither specifically listed nor exempted from the Federal Environmental Protection Agency (US EPA) hazardous waste regulations. The only material of possible concern due to its reactivity is lithium metal. However, button cells contain so little lithium that they can be disposed of in the normal municipal waste stream. Open cells should be treated as hazardous waste

Disposal methods to avoid:

DO NOT INCINERATE or subject battery cells to temperatures in excess of 100°C. Such treatment can cause cell rupture.

Section 14 Transport Information

This product is classified as a Dangerous Good for transport in NZ ; NZS 5433:2020 and SNZ HB 5433:2021

Road, Rail, Sea and Air Transport

UN No	3090
Class - Primary	9
Packing Group	III
Proper Shipping Name	LITHIUM METAL BATTERIES
Marine Pollutant	No
Special Provisions	188 230 310

Section 15 Regulatory Information

This substance is NOT hazardous according to the EPA Hazardous Substances (Classification) Notice 2020 - This product is considered as a Manufactured Article.

Section 16 Other Information

Glossary

EC ₅₀	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
HSW	Health and Safety at Work.
LC ₅₀	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD ₅₀	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017
2. Workplace Exposure Standards and Biological Exposure Indices April 2022 edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2020
5. HSW (Hazardous Substances) Regulations 2017

Disclaimer

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