Material Safety Data Sheet

Date of issue 2024-08-19 Versie 2

Section 1: IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE MANUFACTURER

1.1. Product identification

Product code CR2025

Product name Li-MnO_2 Button cell

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended uses N/A

Restrictions on use N/A

1.3. Details of the supplier of the safety data sheet

Supplier Intronics B.V
P.O. box 123, 3770 AC Barneveld
the Netherlands

For more information, please contact:
Technical support: +31 342 407 050

1.4 Emergency contact:

National Poisons Information Center / University Medical Center Utrecht
PO Box 85500, 3508 GA Utrecht, The Netherlands
+31 88 75 585 61
productnotificatie(at)umcutrecht.nl
http://www.productnotification.nl/

Section 2: HAZARD IDENTIFICATION

2.1. Classification of the substance or mixture

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)

2.2. Label elements

Product identification

Hazard pictograms:

Signal word

Danger

Hazard statements:

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

Precautionary statements:

Preventation:

P201 Obtain special instructions before use
P202 Do not handle until all safety precautions have been read and understood
P260 Do not breathe dusts, 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:

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.
P303+P361+P353 IF ON SKIN (or hair): Take of immediately all contaminated clothing. Rinse skin with water.
P302+P352 IF ON SKIN: Wash with plenty of water
P310 Immediatly call a Poison center
P321 Specific treatment (see additinal emergency instructions)
P330 Rinse mouth
P363 Wash contaminated clothing before reuse.

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.

2.3. Other hazards

Physical and chemical hazards: See Section 10
Human health hazards: See Section 11
Environmental hazards: See Section 12

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS

3.1 Mixtures

Weight (%)	Chemical Composition	CAS No.	EC#
51.05	Stainless steel	12597-68-1	603-108-1
30.28	Manganese dioxide	1313-13-9	215-202-6
0.8	Carbon black	1333-86-4	215-609-9
2.94	1,3-Dioxolane	646-06-0	211-463-5
2.17	Graphite	7782-42-5	231-955-3
2	Lithium	7439-93-2	231-102-5
4	Lithium Perchlorate	7791-03-9	232-237-2
3	1,2-Propanediolcyclic carbonate	108-32-7	205-572-1
3.76	Polypropylene	9003-07-0	618-352-4

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

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

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.

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

Swallowing Do not induce vomiting. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

No data available.

4.3. Personal protective equipment for first-aid responders

No data available.

4.4 Indication of immediate medical attention and special treatment needed

Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

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 an let fire burn. Move containers from fire area if you can do it without risk.
Unsuitable extinguishing material	Water or foam

5.2. 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.

5.3. Specific protective actions for firefighters

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

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150feet) 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.

6.2. Protective equipment

No data available

6.3. 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.

6.4. Environmental precautions

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

6.5. Methods and material for containment and cleaning up

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

6.6. Reference to other sections

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

7.1. 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 dissambled, crushed or exposed to fire or high temperatures. Do not short or install with incorrrect polarity. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in al well-ventilated area. Prevent concentration in hollows and sumps.

7.2. 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

8.1. 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
646-06-0	N/A	N/A	N/A
1333-86-4	TLV-TWA 3mg/m³	REL-TWA 3.5mg/m³	PEL-TWA 3.5mg/m³
7782-42-5	TLV-TWA 2mg/m³	REL-TWA 2.5mg/m³	PEL-TWA 15mppcf PEL-TWA 20mppcf
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
9003-07-0	N/A	N/A	N/A

8.2. Measures to control exposure

Eye / face protection Wear safety goggles or eye protection combined with respiratory protection.

Hand protection Wear appropiate gloves to reduce skin contact.

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.

Respiratory protection Wear suitable protective mask. For a large number of battery leakages, wear chemical protective clothing, including self-contained breathing apparatus.

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.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information about basic physical and chemical properties

Properties	Value
Physical state:	Button
Colour:	Silver
Odour:	Not available
Melting point / freezing point:	Not available
Boiling point or initial boiling point and boiling range:	Not available
Flammability:	Not available
Lower and upper explosion limit/flammability limit:	Not available
Flash point:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
pH	Not available
Kinematic viscosity:	Not available
Solubility	Not available
Partition coefficient (n-octanol/water):	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	160mAh
Aggregate lithium content	0.045g

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity No data available.

10.2. Chemical stability Stable.

10.3. Possibility of hazardous reactions No data available

10.4. Conditions to avoid Flames, sparks, and other sources of ignition, incompatible materials.

10.5. Incompatible materials Oxidizing agents, acid base

10.6. 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
646-06-0	LD50 Rat (oral): 3000mg/kg, LD 50 Rabbit (Dermal): 9074mg/kg
1333-86-4	No data available
7782-42-5	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
9003-07-0	No data available

Skin corrosion / irritation No data available

Serious eye damage / eye 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

12.1. Ecological Toxicity

CAS# 646-06-0
EC50: 6950000mg/L-Crustacea (Daphnia magna)-48h

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

12.2. Persistence and degradability No data available

12.3. Bioaccumulation Potential No data available

12.4. Mobility in soil No data available

12.5. Other adverse effects No data available

Section 13: DISPOSAL CONSIDERATIONS

13.1. Disposal methods

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

13.2 Uncleaned packaging

Recommendation Disposal must be made according to official regulations.

Section 14: INFORMATION REGARDING TRANSPORT

14.1 UN / ID No	IATA-Un number:	UN3090
	IMDG-Un number:	UN3090
14.2 Proper shipping name	IATA-Technical name:	Lithium metal batteries
	IMDG-Technical name:	Lithium metal batteries
14.3 Transport hazard class(es)	IATA-Class:	9
14.4 Packing group	IATA-Packing group:	N/A
	IMDG-Packing group:	N/A
14.5 Hazard label	IATA:	
	IMDG:	N/A
14.6 Environmental hazards		
Marine pollution		No
14.7 IMDG EmS:	F-A. S-I	
14.8 Special precautions for user		No information available

Transport information: The Li-MnO_2 Button cell CR2025 has passed the test UN38.3, according to the report.

According to the special provision 188 of IMDG (41-22), the goods are not subject to other provision of this code.

Weight exceeds the standard. The goods are packaged according to the packaging Instruction 968 section IA of IATA DGR 65th Edition for transportation, Cargo aircraft only.

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

15.1. Safety, health and environmental regulations and legislation 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
646-06-0	Listed	Listed	Listed DSL	Listed
1333-86-4	Listed	Listed	Listed DSL	Listed
7782-42-5	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
9003-07-0	Listed	Listed	Listed DSL	Listed

Section 16: OTHER INFORMATION

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 exist.

Other information:

ACGIH:	American Conference of Governmental Industrial Hygienists
BCF:	Bioconcentration Factor.
BOD:	Biochemical Oxygen Demand.
CAS:	Chemical Abstracts Service
DNEL:	Derived No Effect Level.
DSL:	The Domestic Substances List of Canada.
EC:	European Commision
EC50:	Median effective concentration
IARC:	International Agengy for Research on Cancer
IATA:	International Air Transport Association.
IECSC:	Inventory of Existing Chemical Substances in China
IMDG:	International Maritime Code for Dangerous Goods.
LC50:	Lethal concentration, 50 percent kill.
LD50:	Lethal dose, 50 percent kill.
NDSL:	The Non-domestic Substances List of Canada.
NOEC:	No Observed Effect Concentration
NIOSH:	US National Institute for Occupational Safety and Health
NTP:	US National Toxicology Program
OSHA:	US Occupational Safety and Health
PC-STEL:	Permissible concentration-short time exposure limit
PC-TWA:	Permissible concentration-time weighted average
PEL:	Permissible Exposure Level
REL:	Recommended Exposure Limit
RTECS:	Registry of Toxic Effects of Chemical Substances
STEL:	Short Term Exposure limit.

TDG:	Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations
TLV:	Threshold Limit Value.
TOC:	Total Organoc Carbon
TSCA:	Toxic Substances Control Act of USA
TWA:	Time-weighted average

Date of issue 2024-08-19

Revision date 2023-12-07

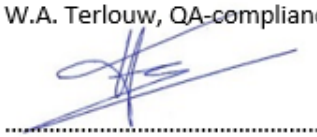
Reason for revision: N/A

Disclaimer

The information in this MSDS is prepared to the best of our ability and reflects the state of knowledge at the time of publication. The data is presented as a guideline for the safe handling, use, storage, transport, and disposal of the substance, and cannot be regarded as a guarantee certificate or quality specification. The information given relates to the substance as such and may no longer be valid when the substance is used together with other substances or in processes.

End of the material safety data sheet

Intronics BV
W.A. Terlouw, QA-compliance officer



.....
Signature