SAFETY DATA SHEET

HCS-2012 APPENDIX D TO §1910.1200

Version 1 **Issue date** 06-Jun-2018
Product name Li-MnO2 Button Cell (Lithium Metal Battery) CR2025 3V **Revision date** 19-Jun-2018

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name	Li-MnO2 Button Cell (Lithium Metal Battery) CR2025 3V

Other means of identification

Battery Weight	2.5 g
Lithium present (single unit)	0.04 g

Recommended use of the chemical and restrictions on use

Recommended use	Power supply
Uses advised against	No information available.

Details of the supplier of the safety data sheet

Supplier	Dongguan Guante Electronics Technology Co., Ltd.
Address	Hengtai Building, Middle Road Of Dongcheng, Guancheng District, Dongguan City
Postal code	523119
Phone	+86-769-23102849
FAX	+86-769-23061577
E-mail	guantecell@163.com

Emergency telephone number

+86-769-23102849

2. HAZARDS IDENTIFICATION

GHS classification

Not classified.

Label elements

Symbols/Pictograms	None
Signal word	None
Hazard statements	Not classified
Precautionary statements	
Prevention	None.
Response	None.
Storage	None.
Disposal	None.

Hazards not otherwise classified (HNOC)

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. The most likely risk is acute exposure when a battery vents. Leaking material exposure to skin, eyes may cause irritation. Inhalation of fumes my cause respiratory irritation.

Unknown acute toxicity

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature Article

Chemical name	CAS No	Weight-%

Stainless steel	12597-68-1	50.5
Manganese dioxide	1313-13-9	30.99
Perchloric acid, lithium salt	7791-03-9	4
Polypropylene	9003-07-0	3.76
Propylene carbonate	108-32-7	3
Polytetrafluoroethylene	9002-84-0	2.17
Graphite	7782-42-5	2.17
Lithium	7439-93-2	1.91
Ethylene glycol dimethyl ether	110-71-4	1.5

4. FIRST AID MEASURES

Description of first aid measures

General advice — In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Inhalation — If contents of an opened battery are inhaled, remove source of contamination or move victim to fresh air. Obtain medical advice.

Skin contact — If skin contact with contents of an open battery occurs, as quickly as possible remove contaminated clothing, shoes and leather goods. Immediately flush with lukewarm, gently flowing water for at least 15 minutes. If irritation or pain persists, seek medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard.

Eye contact — If eye contact with contents of an open battery occurs, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 15 minutes while holding the eyelids open. Neutral saline solution may be used as soon as it is available. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto face. Quickly transport victim to an emergency care facility.

Ingestion — If ingestion of contents of an open battery occurs, never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 60 to 240 mL (2-8 oz.) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility.

Most important symptoms and effects, both acute and delayed

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. The most likely risk is acute exposure when a battery vents. Leaking material exposure to skin, eyes may cause irritation. Inhalation of fumes my cause respiratory irritation. See Section 11 for more information.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media — Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media — No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Cool containers with flooding quantities of water until well after fire is out. Evacuate personnel to safe areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Remove all sources of ignition. Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Do not touch or walk through spilled material. Ensure adequate ventilation, especially in confined areas. Use personal protection recommended in Section 8. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and material for containment and cleaning up

Prevent material from contaminating soil and from entering sewers or waterways. Stop the leak if safe to do so. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation, especially in confined areas. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. Wash thoroughly after handling. Use personal protection recommended in Section 8. Take precautionary measures against static discharges. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat. Store in accordance with local regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	Denmark	European Union
Manganese dioxide (CAS #: 1313-13-9)	TWA: 0.02 mg/m^3 Mn TWA: 0.1 mg/m^3 Mn	(vacated) Ceiling: 5 mg/m^3 Ceiling: 5 mg/m^3 Mn	IDLH: 500 mg/m^3 Mn TWA: 1 mg/m^3 Mn STEL: 3 mg/m^3 Mn	TWA: 0.2 mg/m^3	-
Graphite (CAS #: 7782-42-5)	TWA: 2 mg/m^3 respirable fraction all forms except graphite fibers	-	IDLH: 1250 mg/m^3 TWA: 2.5 mg/m^3 natural respirable dust	TWA: 2.5 mg/m^3	-

Chemical name	Latvia	France	Finland	Germany	Italy
Manganese dioxide (CAS #: 1313-13-9)	TWA: 0.3 mg/m^3	-	TWA: 0.2 mg/m^3 TWA: 0.1 mg/m^3	TWA: 0.2 mg/m^3 TWA: 0.02 mg/m^3 Ceiling / Peak: 1.6 mg/m^3 Ceiling / Peak: 0.16 mg/m^3 TWA: 0.5 mg/m^3	-
Polypropylene (CAS #: 9003-07-0)	TWA: 5 mg/m^3	-	-	-	-
Propylene carbonate (CAS #: 108-32-7)	TWA: 2 mg/m^3	-	-	-	-
Graphite (CAS #: 7782-42-5)	TWA: 2 mg/m^3	TWA: 2 mg/m^3	TWA: 2 mg/m^3	TWA: 1.5 mg/m^3 TWA: 4 mg/m^3	-
Ethylene glycol dimethyl ether (CAS #: 110-71-4)	TWA: 10 mg/m^3	-	-	-	-

Chemical name	Poland	Portugal	Spain	Switzerland	Netherlands
Manganese dioxide (CAS #: 1313-13-9)	TWA: 0.3 mg/m^3	TWA: 0.2 mg/m^3	TWA: 0.2 mg/m^3	TWA: 0.5 mg/m^3	-

Chemical name	Norway	United Kingdom	Australia	Austria	Belgium

Manganese dioxide (CAS #: 1313-13-9)	TWA: 1 mg/m^3 TWA: 0.1 mg/m^3 STEL: 1 ppm STEL: 0.1 mg/m^3	TWA: 0.5 mg/m^3	1 mg/m^3	STEL 2 mg/m^3 TWA: 0.5 mg/m^3	-
Graphite (CAS #: 7782-42-5)	TWA: 5 mg/m^3 TWA: 2 mg/m^3 TWA: 10 mg/m^3 TWA: 4 mg/m^3 STEL: 5 mg/m^3 STEL: 2 mg/m^3 STEL: 10 mg/m^3 STEL: 4 mg/m^3	-	3 mg/m^3	STEL 10 mg/m^3 TWA: 5 mg/m^3	-

Appropriate engineering controls

Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor.

Individual protection measures, such as personal protective equipment

Respiratory protection	Not necessary under normal conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hand protection	Not necessary under normal conditions. Wear neoprene or natural rubber material gloves if handling an open or leaking battery.
Eye/face protection	Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.
Skin and body protection	Not necessary under normal conditions, Wear neoprene or nitride rubber gloves if handling an open or leaking battery.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Solid
Color	No information available
Odor	No information available
Odor threshold	Not determined
pH	Not determined
Melting point/freezing point	Not determined
Boiling point / boiling range	Not determined
Flash point	Not determined
Evaporation rate	Not determined
Flammability (solid, gas)	Not flammable
Flammability limit in air	Not determined
Vapor pressure	Not determined
Vapor density	Not determined
Density	Not determined
Relative density	Not determined
Water solubility	Not determined
Partition coefficient (LogPow)	Not determined
Autoignition temperature	Not determined
Decomposition temperature	Not determined
Kinematic viscosity	Not determined
Dynamic viscosity	Not determined
Explosive properties	Not an explosive
Oxidizing properties	Not determined

Other information

No information available

10. STABILITY AND REACTIVITY

Reactivity
Stable under recommended storage and handling conditions (see SECTION 7, handling and storage).

Chemical stability
Stable under normal conditions.

Possibility of hazardous reactions
None under normal processing.

Conditions to avoid
Extremes of temperature and direct sunlight.

Incompatible materials
None known based on information supplied.

Hazardous decomposition products
None under normal use conditions

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	No known effect based on information supplied.
Eye contact	No known effect based on information supplied.
Skin contact	No known effect based on information supplied.
Ingestion	No known effect based on information supplied.

Information on toxicological effects

Acute toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Manganese dioxide (CAS #: 1313-13-9)	>3480 mg/kg (Rat) male	-	-
Polypropylene (CAS #: 9003-07-0)	>5 g/kg	-	-
Propylene carbonate (CAS #: 108-32-7)	29000 mg/kg (Rat) > 5000 mg/kg bw (Rat)	> 20 mL/kg (Rabbit) 2000 mg/kg bw (Rabbit)	-
Graphite (CAS #: 7782-42-5)	> 2000 mg/kg (rat)	-	> 2000 mg/m³/4h (rat)
Ethylene glycol dimethyl ether (CAS #: 110-71-4)	= 5370 mg/kg (Rat)	-	-

Skin corrosion/irritation
Non-irritating to the skin.

Serious eye damage/eye irritation
No eye irritation.

Sensitization
No information available.

Germ cell mutagenicity
No information available.

Carcinogenicity

Chemical name	ACGIH	IARC	NTP	OSHA
Polypropylene (CAS #: 9003-07-0)	-	Group 3	-	-
Polytetrafluoroethylene (CAS #: 9002-84-0)	-	Group 3	-	-

Reproductive toxicity
No information available.

STOT - single exposure
No information available.

STOT - repeated exposure
No information available.

Aspiration hazard
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/Aquatic plants EC50	Fish LC50	Crustacea EC50
Manganese dioxide (CAS #: 1313-13-9)	> 100 other: v/v saturated solution 72h Desmodesmus subspicatus	> 100 other: % v/v saturated solution 96h Oncorhynchus mykiss	> 100 other: % v/v saturated solution 48h Daphnia magna
Propylene carbonate (CAS #: 108-32-7)	500mg/L72 h Desmodesmus subspicatus > 900 mg/L 72h Desmodesmus subspicatus	1000mg/L 96 h Cyprinus carpio semi-static 5300mg/L 96 h Leuciscus idus static > 1000 mg/L 96h Cyprinus carpio	500mg/L 48 h Daphnia magna > 1000 mg/L 24h 48h Daphnia magna
Graphite (CAS #: 7782-42-5)	> 100 mg/l/72h (Pseudokirchneriella subcapitata)	> 100 mg/l/96h (Danio rerio)	> 100 mg/l/48h (Daphnia magna)

Persistence and degradability
No information available.

Bioaccumulative potential

Chemical name	Partition coefficient (LogPow)
Manganese dioxide (CAS #: 1313-13-9)	<0
Propylene carbonate (CAS #: 108-32-7)	0.48
Ethylene glycol dimethyl ether (CAS #: 110-71-4)	-0.21

Mobility in soil
No information available.

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

DOT / IMDG / IATA

UN/ID No.	3090
UN proper shipping name	LITHIUM METAL BATTERIES(includinglithium alloy batteries)

Hazard class 9
Packing group II
Special precautions No information available
Marine pollutant Non-marine pollutant

15. REGULATORY INFORMATION

International inventories

Component	AICS	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	TSCA
Stainless steel 12597-68-1 (50.5)	-	-	-	-	X	-	-	-
Manganese dioxide 1313-13-9 (30.99)	X	X	X	X	X	X	X	X
Perchloric acid, lithium salt 7791-03-9 (4)	X	X	X	X	X	X	-	X
Polypropylene 9003-07-0 (3.76)	X	X	-	X	X	X	X	X
Propylene carbonate 108-32-7 (3)	X	X	X	X	X	X	X	X
Polytetrafluoroethylene 9002-84-0 (2.17)	X	X	-	X	X	X	X	X
Graphite 7782-42-5 (2.17)	X	X	X	Exempt	X	X	X	X
Lithium 7439-93-2 (1.91)	X	X	X	X	X	X	X	X
Ethylene glycol dimethyl ether 110-71-4 (1.5)	X	X	X	X	X	X	X	X

"-" Not Listed
"X" Listed

US Federal Regulations

SARA 313

Chemical name	SARA 313 - Threshold Values %
Manganese dioxide - 1313-13-9	1.0
Ethylene glycol dimethyl ether - 110-71-4	1.0

SARA 311/312 Hazard Categories
Not applicable

CWA (Clean Water Act)
Not applicable

CERCLA
Not applicable

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Manganese dioxide 1313-13-9	X	-	X
Graphite 7782-42-5	X	X	-

Lithium 7439-93-2	X	X	X
Ethylene glycol dimethyl ether 110-71-4	X	X	X

16. OTHER INFORMATION

Revision note

Issue date	06-Jun-2017
Revision date	19-Jun-2018
Revision note	Not applicable

Key or legend to abbreviations and acronyms used in the safety data sheet

TWA - TWA (Time Weighted Average)
STEL - STEL (Short Term Exposure Limit)
Ceiling - Maximum limit value
TSCA - Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European INventory of Existing Commercial chemical Substances/European LIst of Notified Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korea Existing Chemicals List
PICCS - The Philippine Inventory of Chemicals and Chemical Substances
AICS - The Australian Inventory of Chemical Substances

Disclaimer

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-------- End of Safety Data Sheet --------