

SAFETY DATA SHEET

HCS-2012 APPENDIX D TO §1910.1200

Version 1
Product name Li-MnO₂ Button Cell (3V CR2032)

Issue date 06-Jun-2017
Revision date 06-Jun-2017

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

Product identifier

Product name Li-MnO₂ Button Cell (3V CR2032)

Other means of identification

Product Code CR2032 3.0V 210mAh

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.
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Emergency telephone number

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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 may 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 may 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	-
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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 nitrile 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/m ³ /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 <i>Desmodesmus subspicatus</i>	> 100 other: % v/v saturated solution 96h <i>Oncorhynchus mykiss</i>	> 100 other: % v/v saturated solution 48h <i>Daphnia magna</i>
Propylene carbonate (CAS #: 108-32-7)	500mg/L 72 h <i>Desmodesmus subspicatus</i> > 900 mg/L 72h <i>Desmodesmus subspicatus</i>	1000mg/L 96 h <i>Cyprinus carpio</i> semi-static 5300mg/L 96 h <i>Leuciscus idus</i> static > 1000 mg/L 96h <i>Cyprinus carpio</i>	500mg/L 48 h <i>Daphnia magna</i> > 1000 mg/L 24h 48h <i>Daphnia magna</i>
Graphite (CAS #: 7782-42-5)	> 100 mg/l/72h (<i>Pseudokirchneriella subcapitata</i>)	> 100 mg/l/96h (<i>Danio rerio</i>)	> 100 mg/l/48h (<i>Daphnia magna</i>)

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/NDL	EINECS/ELI NCS	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	06-Jun-2017
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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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

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