SAFETY DATA SHEET

HCS-2012 APPENDIX D TO §1910.1200

Version 1 **Issue Date** 16-Jun-2016
Product Name Button Cell **Revision date** 16-Jun-2016

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

Product identifier

Product Name	Button Cell

Other means of identification

Synonym	No information available

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	Hugfun International Hongkong Limited
Address	#333 Huchong Road, Hushan Town, Cixi City, Ningbo, China
Postal Code	315300
Phone	0574-63916544
FAX	0574-63510239
E-mail	xuxuefeng@hugfun.com.cn

Emergency telephone number

0574-63916544

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)

No information available.

Unknown acute toxicity

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature Article

Chemical Name	CAS No	Weight-%
Iron	7439-89-6	37
Manganese dioxide	1313-13-9	30
Water	7732-18-5	12
Potassium hydroxide	1310-58-3	10
Zinc	7440-66-6	8

Graphite	7782-42-5	3

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	Not an expected route of exposure. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin Contact	Wash hands thoroughly after handling.
Eye contact	Not an expected route of exposure. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Ingestion	Not an expected route of exposure. If swallowed, call a poison control center or physician immediately.

Most important symptoms and effects, both acute and delayed

No information available.

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

No information available.

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. Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with eyes.

Methods and material for containment and cleaning up

Prevent further leakage or spillage 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. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with eyes.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition. 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	-
Potassium hydroxide (CAS #: 1310-58-3)	Ceiling: 2 mg/m^3	(vacated) Ceiling: 2 mg/m^3	Ceiling: 2 mg/m^3	Ceiling: 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	-
Potassium hydroxide (CAS #: 1310-58-3)	-	STEL: 2 mg/m^3	STEL: 2 mg/m^3 Ceiling: 2 mg/m^3	-	-
Zinc (CAS #: 7440-66-6)		-	-	TWA: 0.1 mg/m^3 TWA: 2 mg/m^3 Ceiling / Peak: 0.4 mg/m^3 Ceiling / Peak: 4 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	-

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	-
Potassium hydroxide (CAS #: 1310-58-3)	STEL: 1 mg/m^3 TWA: 0.5 mg/m^3	Ceiling: 2 mg/m^3	STEL: 2 mg/m^3	TWA: 2 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	-
Potassium hydroxide (CAS #: 1310-58-3)	Ceiling: 2 mg/m^3	STEL: 2 mg/m^3	2 mg/m^3 Peak	TWA: 2 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

Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition.

Individual protection measures, such as personal protective equipment

Respiratory protection	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	No special technical protective measures are necessary.
Eye/face protection	Avoid contact with eyes.

Skin and body protection No special technical protective measures are necessary.

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 applicable
Evaporation rate	Not determined
Flammability (solid, gas)	Not flammable
Flammability Limit in Air	Not applicable
Vapor Pressure	Not determined
Vapor density	Not applicable
Density	Not determined
Partition coefficient (LogPow)	Not determined
Autoignition temperature	Not applicable
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

Strong heating. Incompatible materials.

Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

Hazardous Decomposition Products

None under normal use conditions.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Not an expected route of exposure
Eye contact	No known effect based on information supplied
Skin Contact	No known effect based on information supplied
Ingestion	Not an expected route of exposure

Information on toxicological effects

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Iron (CAS #: 7439-89-6)	98.6 g/kg bw (rat)	-	-
Manganese dioxide (CAS #: 1313-13-9)	>3480 mg/kg (Rat) male	-	-
Potassium hydroxide (CAS #: 1310-58-3)	= 333 mg/kg (Rat)	-	-
Graphite (CAS #: 7782-42-5)	> 2000 mg/kg (rat)	-	> 2000 mg/m³/4h (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
No information available.

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
Iron (CAS #: 7439-89-6)	-	13.6: 96 h Morone saxatilis mg/L LC50 static	> 100 mg/L/48h (Daphnia magna)
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
Potassium hydroxide (CAS #: 1310-58-3)	-	80mg/L/96h Gambusia affinis static	-
Zinc (CAS #: 7440-66-6)	-	LC50 - Daphnia magna (Water flea) - 0.068 mg/l - 48 h	LC50 - Daphnia magna (Water flea) - 0.068 mg/l - 48 h
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
Potassium hydroxide (CAS #: 1310-58-3)	0.83

Chemical Name	Bioconcentration factor (BCF)
Zinc (CAS #: 7440-66-6)	466

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: Dispose of in accordance with federal, state and local regulations.

Chemical Name	California Hazardous Waste Status
Potassium hydroxide 1310-58-3	Toxic Corrosive
Zinc 7440-66-6	Ignitable powder Toxic

14. TRANSPORT INFORMATION

UN/ID No. Not regulated
UN Proper shipping name Not regulated
Hazard Class Not regulated
Packing Group Not regulated
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
Iron 7439-89-6 (37)	X	X	X	Exempt	X	X	X	X
Manganese dioxide 1313-13-9 (30)	X	X	X	X	X	X	X	X
Water 7732-18-5 (12)	X	X	X	Exempt	X	X	X	X
Potassium hydroxide 1310-58-3 (10)	X	X	X	X	X	X	X	X
Zinc 7440-66-6 (8)	X	X	X	Exempt	X	X	X	X
Graphite 7782-42-5 (3)	X	X	X	Exempt	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

Zinc - 7440-66-6	1.0

SARA 311/312 Hazard Categories

Not applicable

CWA (Clean Water Act)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Potassium hydroxide 1310-58-3	1000 lb	-	-	X
Zinc 7440-66-6	-	X	X	-

CERCLA

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Potassium hydroxide 1310-58-3	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ
Zinc 7440-66-6	1000 lb	-	RQ 454 kg final RQ RQ 1000 lb final RQ

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
Potassium hydroxide 1310-58-3	X	X	X
Zinc 7440-66-6	X	X	X
Graphite 7782-42-5	X	X	-

16. OTHER INFORMATION

Revision Note

Issue Date	16-Jun-2016
Revision date	16-Jun-2016
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 - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Disclaimer

The information provided in this Material 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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