1. Identification

(a) Product identifier

Product name: LITHIUM-MANGANESE BUTTON CELL

(b) Other means of identification

Product description: Nominal Voltage: 3.0V
Ampere-hour: 210mAh
Lithium content: 0.053g

(c) Recommended use of the chemical and restrictions on use

Recommended use: Battery for low power consumption electronic products, like electronic watch, electronic calendar, calculator, computer motherboard, electronic toy, small electronic gifts, etc.
Restriction on use: No information available.

(d) Details of the supplier of the product

Company name(China): JINTAN CHAOCHUANG BATTERY CO., LTD.
Address: XiYang Industrial Zone, Xuebu Town, JinTan City, JiangSu Province, China
E-mail: marvelous@chaochuang.com
Telephone: +86-519-82483588
+86-519-82485336

(e) Emergency phone number

+86-519-82483588

2. Hazard(s) identification

(a) Classification of the chemical

The batteries are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard. A sealed Li-metal Battery is not hazardous in normal use.

(b) Label elements

Pictogram(s): No pictogram.
Signal word: No signal word.
Hazard statements: No hazard statement.
Precautionary statements: No precautionary statement.

(c) Description of any hazards not otherwise classified

In case of mistreatment (abusive over charge, reverse charge, external short circuit...) and in case of fault some electrolyte can leak from the cell through the safety device. In these cases refer to the risk of the electrolyte. Contact with internal components may cause irritation or severe burns. Irritating to eyes, respiratory system, and skin. The electrode materials are only hazardous, if the materials are released by mechanical damaging of the cell or if exposed
to fire.
Skin touch: Contact with battery electrolyte may cause burns and skin irritation.
Eyes touch: Contact with battery electrolyte may cause burns. Eye damage is possible.
Inhalation: Inhalation of a large number of vapors or fumes released due to heat may cause respiratory.
Ingestion: Ingestion of battery contents may cause mouth, throat and intestinal burns and damage.

(d) Ingredient with unknown acute toxicity
No information available.

3. Composition/information on ingredients

(a) Mixtures information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Concentration Range %</th>
<th>Typical Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless steel</td>
<td>12597-68-1</td>
<td>35.68%-59.96%</td>
<td>45.2%</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>9003-07-0</td>
<td>2.56%-7.45%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Manganese dioxide</td>
<td>1313-13-9</td>
<td>21.84%-41.33%</td>
<td>30%</td>
</tr>
<tr>
<td>Poly(tetrafluoroethylene)</td>
<td>9002-84-0</td>
<td>1.19%-1.80%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Graphite</td>
<td>7782-42-5</td>
<td>1.19%-1.80%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Lithium metal</td>
<td>7439-93-2</td>
<td>1.57%-3.25%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Lithium perchlorate</td>
<td>7791-03-9</td>
<td>2.63%-2.70%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Propylene carbonate</td>
<td>108-32-7</td>
<td>2.07%-5.26%</td>
<td>4.8%</td>
</tr>
<tr>
<td>1,2-Dimethoxyethane</td>
<td>110-71-4</td>
<td>1.14%-5.26%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Silicon dioxide</td>
<td>14808-60-7</td>
<td>0.43%-0.89%</td>
<td>0.8%</td>
</tr>
</tbody>
</table>

4. First-aid measures

(a) Description of first aid measures

Inhalation: Internal components: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice / attention if you feel unwell.
Skin contact: Internal components: Remove contaminated clothes and rinse the skin with plenty of water. Get medical advice / attention if you feel unwell.
Eye contact: Internal components: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice / attention if you feel unwell.
Ingestion: Internal components: Have victim drink 60 to 240 mL (2-8 oz.) of water. And DO NOT induce vomiting. Get medical aid.

(b) Most important symptoms/effects, acute and delayed

Contact with internal components may cause allergic skin sensitzation (rash) and irritate eyes, skin, nose, throat, respiratory system.

(c) Immediate medical attention and special treatment

No information available.
5. Fire-fighting measures

(a) Extinguishing media

Suitable extinguishing media: Use foam, dry powder or dry sand, CO₂ as appropriate.

Unsuitable extinguishing media: No information available.

(b) Special hazards arising from the chemical

Under fire conditions, batteries may burst and release hazardous decomposition products when exposed to a fire situation. This could result in the release of flammable or corrosive materials. Hazardous combustion products: CO, CO₂, Metal oxides, Irritating fumes

(c) Special protective equipment and precautions for fire-fighters

Firefighters must wear fire resistant protective equipment and appropriate breathing apparatus. The staff must equip with filtermask (full mask) or isolated breathing apparatus. The staff must wear the clothes which can defense the fire and the toxic gas. Put out the fire in the upwind direction. Remove the container to the open space as soon as possible. Spray water on the containers in the fireplace to keep them cool until finish extinguishment.

6. Accidental release measures

(a) Personal precautions, protective equipment and emergency procedures

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area, dispose the case after the batteries cool and vapors dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors.

(b) Methods and materials for containment and cleaning up

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters.

7. Handling and storage

(a) Precautions for safe handling

Always follow the warning information on the batteries and in the manuals of devices. Only use the recommended battery types. Keep batteries away from children. For devices to be used by children, the battery casing should be protected against unauthorized access. Unpacked batteries shall not lie about in bulk. In case of battery change always replace all batteries by new ones of identical type and brand. Do not swallow batteries. Do not throw batteries into water. Do not throw batteries into fire. Avoid deep discharge. Do not short-circuit batteries Use recommended charging time and current.

(b) Conditions for safe storage, including any incompatibilities

Do not storage Battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuit by other metal objects. Keep out of reach of children.

8. Exposure controls/personal protection
(a) **Control parameters**

Not established.

(b) **Appropriate engineering controls**

Under normal conditions (during charge and discharge) release of ingredients does not occur.

(c) **Personal protective equipment**

Respiratory protection: No personal respiratory protective equipment normally required. In case of inadequate ventilation wear respiratory protection.

Hand protection: Wear protective gloves.

Eye/face protection: No personal protective equipment normally required.

Skin/body protection: Wear protective clothing to prevent contact.

### 9. Physical and chemical properties

(a) **Appearance**

Silvery button cell; Solid

(b) **Odor**

Odorless

(c) **Odor threshold**

Not available.

(d) **pH**

7.0

(e) **Melting point/freezing point**

Not available.

(f) **Initial boiling point and boiling range**

Not available.

(g) **Flash point**

Not applicable.

(h) **Evaporation rate**

Not applicable.

(i) **Flammability**

Non flammable.

(j) **Upper/lower flammability or explosive limits**

Not available.

(k) **Vapor pressure**

Not applicable.

(l) **Vapor density**

Not available.

(m) **Density**

2.3-3.16 g/cm³

(n) **Solubility(ies)**

Insoluble in water.

(o) **Partition coefficient: n-octanol/water**

Not available.

(p) **Auto-ignition temperature**

Not available.

(q) **Decomposition temperature**

Not available.

(r) **Viscosity**

Not available.

### 10. Stability and reactivity

(a) **Reactivity**

Stable under recommended storage and handling conditions.

(b) **Chemical stability**

Stable under normal conditions.

(c) **Possibility of hazardous reactions**

When heated the risk of rupture may occurs. Due to special safety construction, rupture implies controlled release of pressure without ignition.
(d) Conditions to avoid

Do not subject battery to mechanical shock. Keep away from open flames, high temperature.

(e) Incompatible materials

Strong oxidizer, strong acid.

(f) Hazardous decomposition products

No information available.

11. Toxicological information

(a) Information on the likely routes of exposure

Inhalation: Inhalation of a large number of vapors or fumes released due to heat may cause respiratory.
Ingestion: Ingestion of battery contents may cause mouth, throat and intestinal burns and damage.
Skin contact: Contact with battery electrolyte may cause burns and skin irritation.
Eye contact: Contact with battery electrolyte may cause burns. Eye damage is possible.

Under normal conditions (during charge and discharge) release of ingredients does not occur. If accidental release occurs see information in section 2, 3, and 4. Swallowing of a battery can be harmful. Call the local Poison Control Centre for advice and follow-up.

(b) Information on toxicological characteristics

Acute toxicity: No data available.
Skin corrosion/irritation: The liquid in the battery irritates.
Serious eye damage/irritation: The liquid in the battery irritates.
Respiratory sensitization: The liquid in the battery may cause sensitization to some person.
Skin sensitization: The liquid in the battery may cause sensitization to some person.
Carcinogenicity: No data available.
Germ Cell Mutagenicity: No data available.
Reproductive Toxicity: No data available.
STOT-Single Exposure: No data available.
STOT-Repeated Exposure: No data available.
Aspiration Hazard: No data available.

12. Ecological information

(a) Ecotoxicity

No information available.

(b) Persistence and Degradability

No information available.

(c) Bioaccumulative potential

No information available.

(d) Mobility in soil

No information available.
13. Disposal considerations

(a) Safe handling and methods of disposal
Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

14. Transport information
According to the packaging instruction 967 section II of IATA DGR 56th Edition for transportation. According to the packaging provision 188 of IMDG or the Recommendation on the Transportation of Dangerous Goods-Model Regulation (18th).
The products are not subjects to dangerous.

(a) UN number
(b) UN Proper shipping name
(c) Transport hazard class(es)
(d) Packing group (if applicable)
(e) Marine pollutant (Yes/No)
(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)
(g) Special precautions

15. Regulatory information

(a) Safety, health and environmental regulations specific for the product in question

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>USA TSCA</th>
<th>EU EINECS</th>
<th>Japan ENCS</th>
<th>Korea ECL</th>
<th>China IECSC</th>
<th>Canada DSL/NDSL</th>
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<tbody>
<tr>
<td>12597-68-1</td>
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<td>Not listed</td>
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<td>1313-13-9</td>
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<td>14808-60-7</td>
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</table>

Remark: The above-mentioned search results are based on the Non-Confidential Inventory.

16. Other information, including date of preparation or last revision

(a) Preparation and revision information
Safety Data Sheet
According to HCS-2012 APPENDIX D TO §1910.1200

Date of previous revision: 02/09/2015
Revision summary: The first revision.

Date of this revision: 09/29/2013

(b) Abbreviations and acronyms
TSCA: Toxic Substances Control Act, The American chemical inventory.
DSL/NDSL: Domestic Substances List/Non-Domestic Substances List
EINECS: European Inventory of Existing Commercial chemical Substances
ENCS: Japanese Existing and New Chemical Substances
ECL: Existing Chemicals List, the Korean chemical inventory.
IECSC: Inventory of existing chemical substances in China.

(c) Disclaimer
Because all of our batteries are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard. The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.

------------------------------------ End of the SDS ------------------------------------