

FOSHAN QIDE NEW ENERGY TECHNOLOGY CO., LTD.
NANSHA INDUSTRIAL ZONE, DANZAO TOWN, FOSHAN CITY, CHINA

SGS Job No. : CP16-051701 - GZ
Sample Name : Button Cell Battery
Model No. : AG13, 357, LR44
Client Reference Information : AG1,364,LR621; AG2,396,LR726; AG3,392,LR41; AG4,377,LR626;
AG5,393,LR754; AG6,371,LR920; AG7,396,LR927; AG8,391,LR1120;
AG9,394,LR936; AG10,389,LR1130; AG11,362,LR721; AG12,386,LR43;
AG13,357,LR44; AG0,379,LR69
Manufacturer : FOSHAN QIDE NEW ENERGY TECHNOLOGY CO.,LTD.
Country of Origin : CHINA
End Uses : Use in electronic toy, watch, clock, calculator
Composition/Ingredient of sample (as per client submission) : See section 3 Composition/information on ingredients on the SDS report
Job Receiving Date : 12 Aug 2016
SDS Preparation Period : 12 Aug 2016 - 18 Aug 2016

Service Requested : Safety Data Sheet (SDS) for the sample with submitted composition.

Summary : As per request, the contents and formats of the SDS are prepared in accordance with US Regulations Relating to Labor 29 CFR 1910.1200 (g), and is provided per attached.

Remark:

The SDS is prepared based on the information provided by client.

* This sample is likely to be classified as article and is out of scope of a SDS as set out in 29 CFR Part 1910.1200. This SDS is generated for client's reference only.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Zm guan
Approved Signatory



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Safety Data Sheet

29 CFR 1910.1200

Printing date 08/18/2016

Reviewed on 08/18/2016

1 Identification

- **Product identifier**
- **Trade name:** Button Cell Battery
- **Recommended use of the chemical and restrictions on use:**
- **Application of the substance / the preparation:** Use in electronic toy, watch, clock, calculator
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** FOSHAN QIDE NEW ENERGY TECHNOLOGY CO., LTD.
- **Full address:** NANSHA INDUSTRIAL ZONE, DANZAO TOWN, FOSHAN CITY, CHINA
- **Phone number:** +86-0757-86619668
- **Email:** david@qidebattery.com
- **Other US contact point:** Not available
- **Further information obtainable from:** FOSHAN QIDE NEW ENERGY TECHNOLOGY CO., LTD.
- **Emergency telephone number:**
Poison Center
Tel: +1 800 222 1222
+86-13928217262 David Zhang
- **Reference Number:** CP16-051701 - GZ, CANEC1615847801
- **Remark:**
* This sample is likely to be classified as article and is out of scope of a SDS as set out in 29 CFR Part 1910.1200. This SDS is generated for client's reference only.

2 Hazard(s) identification

- **Classification of the substance or mixture**
Classification according to OSHA Hazard Communication Standard (29 CFR 1910.1200)
- 
GHS02 Flame

 Flam. Sol. 2 H228 Flammable solid.
 Self-heat. 1 H251 Self-heating: may catch fire.
- 
GHS05 Corrosion

 Skin Corr. 1A H314 Causes severe skin burns and eye damage.
 Eye Dam. 1 H318 Causes serious eye damage.
- 
GHS07

 Acute Tox. 4 H302 Harmful if swallowed.
 Acute Tox. 4 H332 Harmful if inhaled.
- **Information concerning particular hazards for human and environment:**
The product has to be labeled due to the calculation procedure of OSHA Hazard Communication Standard (29 CFR 1910.1200).
- **Classification system:**
The classification is according to the latest edition of OSHA Hazard Communication Standard (29 CFR 1910.1200), and extended by company and literature data.

(Contd. on page 2)

USA

Safety Data Sheet

29 CFR 1910.1200

Printing date 08/18/2016

Reviewed on 08/18/2016

Trade name: **Button Cell Battery**

(Contd. of page 1)

- **Label elements**
- **Labelling according to OSHA Hazard Communication Standard (29 CFR 1910.1200)**
- **Hazard pictograms**



GHS02 GHS05 GHS07

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**
manganese dioxide
potassium hydroxide
- **Hazard statements**
H228 *Flammable solid.*
H251 *Self-heating; may catch fire.*
H302+H332 *Harmful if swallowed or if inhaled.*
H314 *Causes severe skin burns and eye damage.*
- **Precautionary statements**
P210 *Keep away from heat/sparks/open flames/hot surfaces. No smoking.*
P235+P410 *Keep cool. Protect from sunlight.*
P303+P361+P353 *If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*
P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P310 *Immediately call a POISON CENTER/doctor.*
P405 *Store locked up.*
P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*
- **Hazards not otherwise classified (HNOC)** *No further relevant information available.*

3 Composition/information on ingredients

- **Chemical characterization:** *Mixtures*
- **Description:**
Mixture of the substances listed below with nonhazardous additions.
For the wording of the listed hazard statements refer to Section 16.

- **Composition:**

1313-13-9	manganese dioxide	Acute Tox. 4, H302; Acute Tox. 4, H332	43.0%
7440-66-6	zinc powder -zinc dust (stabilized)		23.0%
7439-89-6	iron	Flam. Sol. 2, H228; Self-heat. 1, H251	20.0%
1310-58-3	potassium hydroxide	Skin Corr. 1A, H314; Acute Tox. 4, H302	8.0%
7782-42-5	Graphite		6.0%

4 First-aid measures

- **Description of first aid measures**
- **General description:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

(Contd. on page 3)

Safety Data Sheet

29 CFR 1910.1200

Printing date 08/18/2016

Reviewed on 08/18/2016

Trade name: Button Cell Battery

(Contd. of page 2)

- In case of unconsciousness place patient stably in side position for transportation.*
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Immediately call a doctor.
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Suitable extinguishing agents:**
CO₂ extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:**
During heating or in case of fire poisonous gases are produced.
- **Special protective equipment and precautions for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

7 Handling and storage

- **Precautions for safe handling:**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
For the general occupational hygienic measures refer to Section 8.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.

USA

(Contd. on page 4)

Safety Data Sheet

29 CFR 1910.1200

Printing date 08/18/2016

Reviewed on 08/18/2016

Trade name: **Button Cell Battery**

(Contd. of page 3)

8 Exposure controls/personal protection

· **Components with limit values that require monitoring at the workplace:**

1313-13-9 manganese dioxide (43.0%)

PEL (USA) Ceiling limit value: 5 mg/m³
as Mn

REL (USA) Short-term value: 3 mg/m³
Long-term value: 1 mg/m³
as Mn

TLV (USA) Long-term value: 0.02* 0.1* mg/m³
as Mn; *respirable **inhalable fraction

1310-58-3 potassium hydroxide (8.0%)

REL (USA) Ceiling limit value: 2 mg/m³

TLV (USA) Ceiling limit value: 2 mg/m³

7782-42-5 Graphite (6.0%)

PEL (USA) Long-term value: 15 mppcf* mg/m³
*impinger samples counted by light field techn.

REL (USA) Long-term value: 2.5* mg/m³
*respirable dust

TLV (USA) Long-term value: 2* mg/m³
all forms except graphite fibers; *resp. fraction

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Based on the composition shown in Section 3, the following measures are suggested for occupational safety measure.**

· **Appropriate engineering controls:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

See Section 7 for information about design of technical facilities.

· **Personal protective equipment:**

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material:**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 5)

Safety Data Sheet

29 CFR 1910.1200

Printing date 08/18/2016

Reviewed on 08/18/2016

Trade name: **Button Cell Battery**

(Contd. of page 4)

· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· General Information

· Appearance:

Form:	Solid
Color:	White
· Odor:	Odorless
· Odor threshold:	Not available

· **pH-value:** Not available

· Change in condition

Melting point/Melting range:	Not available
Freezing point:	Not available
Boiling point/Boiling range:	Not available

· **Flash point:** Not available

· **Flammability (solid, gaseous):** Not available

· **Auto-Ignition temperature:** Not available

· **Decomposition temperature:** Not available

· Explosion limits:

Lower:	Not available
Upper:	Not available

· **Vapor pressure:** Not available

· **Density:** Not available

· **Relative density** Not available

· **Vapor density** Not available

· **Evaporation rate** Not available

· Solubility in / Miscibility with

Water: Not available

· **Partition coefficient (n-octanol/water):** Not available

· Viscosity:

Dynamic: Not available

Kinematic: Not available

· Other information

No further relevant information available.

10 Stability and reactivity

· **Reactivity:** Data not available

· **Chemical stability:** Data not available

· **Possibility of hazardous reactions:** No dangerous reactions known.

· **Conditions to avoid:** No further relevant information available.

· **Incompatible materials:** No further relevant information available.

(Contd. on page 6)

Safety Data Sheet

29 CFR 1910.1200

Printing date 08/18/2016

Reviewed on 08/18/2016

Trade name: **Button Cell Battery**

(Contd. of page 5)

· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

7439-89-6 iron

Oral	LD50	30000 mg/kg (rat)
------	------	-------------------

· **Skin corrosion/irritation:** Strong caustic effect on skin and mucous membranes.

· **Serious eye damage/irritation:**

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

· **Respiratory or skin sensitization:** Sensitization possible.

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability:** No further relevant information available.

· **Bioaccumulative potential:** No further relevant information available.

· **Mobility in soil:** No further relevant information available.

· **Other adverse effects:** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

USA

(Contd. on page 7)

Safety Data Sheet

29 CFR 1910.1200

Printing date 08/18/2016

Reviewed on 08/18/2016

Trade name: **Button Cell Battery**

(Contd. of page 6)

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	UN3095
<ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG · IATA 	<p><i>Corrosive solids, self-heating, n.o.s. (Potassium hydroxide)</i> CORROSIVE SOLID, SELF-HEATING, N.O.S. (POTASSIUM HYDROXIDE, zinc powder -zinc dust (stabilized)), MARINE POLLUTANT <i>CORROSIVE SOLID, SELF-HEATING, N.O.S. (POTASSIUM HYDROXIDE)</i></p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p>8 Corrosive substances 8, 4.2</p>
<ul style="list-style-type: none"> · IMDG 	<div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p>8 Corrosive substances 8/4.2</p>
<ul style="list-style-type: none"> · IATA 	<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>8 Corrosive substances 8 (4.2)</p>
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	I
<ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: 	<p><i>Product contains environmentally hazardous substances: zinc powder -zinc dust (stabilized)</i> <i>Yes (DOT)</i> <i>Symbol (fish and tree)</i></p>
<ul style="list-style-type: none"> · Special precautions for user · EMS Number: · Segregation groups 	<p><i>Warning: Corrosive substances</i> <i>F-A,S-N</i> <i>Alkalis</i></p>
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: · DOT · Quantity limitations · Remarks: 	<p><i>On passenger aircraft/rail: 1 kg</i> <i>On cargo aircraft only: 25 kg</i> <i>Special marking with the symbol (fish and tree).</i></p>

(Contd. on page 8)

USA

Safety Data Sheet

29 CFR 1910.1200

Printing date 08/18/2016

Reviewed on 08/18/2016

Trade name: Button Cell Battery

(Contd. of page 7)

· IMDG	
· Limited quantities (LQ)	0
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
· UN "Model Regulation":	UN 3095 CORROSIVE SOLIDS, SELF-HEATING, N.O.S. (POTASSIUM HYDROXIDE), 8 (4.2), I, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

1313-13-9 manganese dioxide

· **TSCA (Toxic Substances Control Act):**

1313-13-9 manganese dioxide

7782-42-5 Graphite

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

1313-13-9 manganese dioxide

D

7440-66-6 zinc powder -zinc dust (stabilized)

II

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

16 Other information

· **Relevant hazard statements**

H228 Flammable solid.

H251 Self-heating: may catch fire.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H332 Harmful if inhaled.

· *****

The contents and format of this SDS are in accordance with 29 CFR 1910.1200(g)

(Contd. on page 9)

Safety Data Sheet

29 CFR 1910.1200

Printing date 08/18/2016

Reviewed on 08/18/2016

Trade name: Button Cell Battery

(Contd. of page 8)

DISCLAIMER OF LIABILITY

The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in anyway connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

Remark:

* This sample is likely to be classified as article and is out of scope of a SDS as set out in 29 CFR Part 1910.1200. This SDS is generated for client's reference only.

· **Date of preparation / last revision** 08/18/2016 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

Flam. Sol. 2: Flammable solids – Category 2

Self-heat. 1: Self-heating substances and mixtures – Category 1

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

· *****

End of document

USA