

The following sample(s) was/were submitted and identified on behalf of the clients as:

SHENZHEN GASSNER BATTERY CO.,LTD

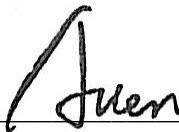
B2, BAOAN FOREIGN TRADE INDUSTRY CITY, FOURTH INDUSTRY AREA, LONGHUA, SHENZHEN, CHINA,  
518109.

SGS Job No. : GZHG1302005693OT  
Supplier : GASSNER  
Style / Item No. : R03, R6, R14, R20, 6F22  
Sample Name : CARBON BATTERIES  
End Uses : Digital and electronic devices  
Composition/Ingredient of sample (as per client submission) : See section 2 Composition/information on ingredients on the MSDS report  
Job Receiving Date : 27 Feb 2013  
MSDS Preparation Period : 27 Feb 2013 - 05 Mar 2013

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

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

Signed for and on behalf of  
SGS-CSTC Ltd.



Allen Xie

Approved Signatory

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/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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.

**Material Safety Data Sheet**

Printing date 03/05/2013

Reviewed on 02/27/2013

**1 Identification of the substance/mixture and of the company/undertaking**

- **Product identifier**
- **Trade name:** CARBON BATTERIES
- **Article number:** R03; R6; R14; R20; 6F22
- **Application of the substance / the preparation:** Digital and electronic devices
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** SHENZHEN GASSNER BATTERY CO.,LTD
- **Name:** Cai JunCheng
- **Full address:**  
BLOCK 2, BAO'AN FOREIGN TRADE INDUSTRY CITY, FOURTH INDUSTRY AREA, LONGHUA,  
SHENZHEN, CHINA, 518109.
- **Phone number:** +86-755-27742873
- **Further information obtainable from:** SHENZHEN GASSNER BATTERY CO.,LTD
- **Emergency telephone number:** +86-13691731117
- **Email:** gassnergm@cngassner.com
- **Reference Number:** GZHG1202003495OT; CANHG1201510602.

**2 Composition/information on ingredients**

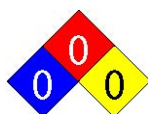
- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

1313-13-9	manganese dioxide	45.5%
7440-66-6	zinc	35.4%
07646-85-7	zinc chloride	19.1%

**3 Hazards identification**

- **Information pertaining to particular dangers for man and environment:**  
This product is not considered hazardous by the 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.
- **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 0

Reactivity = 0

(Contd. on page 2)

**Material Safety Data Sheet**

Printing date 03/05/2013

Reviewed on 02/27/2013

**Trade name: CARBON BATTERIES**

(Contd. of page 1)

**· HMIS-ratings (scale 0 - 4)**

HEALTH	0
FIRE	0
REACTIVITY	0

Health = 0

Fire = 0

Reactivity = 0

**· Other hazards**

*A sealed Carbon battery is not hazardous in normal use on principle.*

*The materials contained in this product may only represent below hazard if the integrity of the battery is compromised, physically or electrically abused:*

**NFPA ratings (scale 0 - 4)**

*The substance demonstrates unusual reactivity with water.*

Health = 4

Fire = 4

Reactivity = 2

**HMIS-ratings (scale 0 - 4)**

Health = 4

Fire = 4

Reactivity = 2

**4 First aid measures****· General information:**

*If exposure to internal materials within battery due to damaged outer casing, the following actions are recommended.*

*Immediately remove any clothing soiled by the product.*

*No special measures required.*

- After inhalation:** *Supply fresh air; consult doctor in case of complaints.*
- After skin contact:** *Immediately rinse with water.*
- After eye contact:** *Rinse opened eye for several minutes under running water. Then consult a doctor.*
- After swallowing:** *If symptoms persist consult doctor.*

**5 Firefighting measures**

- Suitable extinguishing agents:** *CO2, sand, extinguishing powder. Do not use water.*
- For safety reasons unsuitable extinguishing agents:** *Water*
- Special hazards arising from the substance or mixture** *No further relevant information available.*
- Protective equipment:** *No special measures required.*

## Material Safety Data Sheet

Printing date 03/05/2013

Reviewed on 02/27/2013

**Trade name: CARBON BATTERIES**

### 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.

· **Environmental precautions:**

*Do not allow product to reach sewage system or any water course.*

*Inform respective authorities in case of seepage into water course or sewage system.*

*Do not allow to enter sewers/ surface or ground water.*

· **Methods and material for containment and cleaning up:**

*Do not flush with water or aqueous cleansing agents*

· **Reference to other sections**

*No dangerous substances are released.*

*See Section 7 for information on safe handling.*

*See Section 8 for information on personal protection equipment.*

*See Section 13 for disposal information.*

### 7 Handling and storage

· **Handling:**

· **Precautions for safe handling** No special measures required.

· **Information about protection against explosions and fires:** Protect against electrostatic charges.

· **Storage:**

· **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.*

*Store in cool, dry conditions in well sealed receptacles.*

· **Specific end use(s)** No further relevant information available.

## Material Safety Data Sheet

Printing date 03/05/2013

Reviewed on 02/27/2013

**Trade name: CARBON BATTERIES**

### 8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

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

#### 1313-13-9 manganese dioxide

PEL (USA)	Short-term value: C 5 mg/m <sup>3</sup> as Mn
REL (USA)	Short-term value: 3 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup> as Mn
TLV (USA)	0.2 mg/m <sup>3</sup> as Mn
WEL (Great Britain)	5 mg/m <sup>3</sup> as Mn

#### 1310-58-3 potassium hydroxide

REL (USA)	C2 mg/m <sup>3</sup>
TLV (USA)	Short-term value: C 2 mg/m <sup>3</sup>
WEL (Great Britain)	Short-term value: 2 mg/m <sup>3</sup>

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

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

· **Breathing equipment:** Not required.

· **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 and has to be observed.

· **Eye protection:** Not required.

**Material Safety Data Sheet**

Printing date 03/05/2013

Reviewed on 02/27/2013

**Trade name: CARBON BATTERIES****9 Physical and chemical properties****· General Information****· Appearance:****Form:** Solid**Color:** golden**· Odor:** Odorless**· Odour threshold:** Not available**· pH-value:** Not available**· Change in condition****Melting point/Melting range:** Not available**Boiling point/Boiling range:** Not available**· Flash point:** Not available**· Flammability (solid, gaseous):** Not available**· Ignition temperature:** Not available**· Decomposition temperature:** Not available**· Auto igniting:** Product is not self-igniting.**· Danger of explosion:** Product does not present an explosion hazard.**· Explosion limits:****Lower:** Not available**Upper:** Not available**· Oxidizing properties** Not available**· Vapor pressure:** Not available**· Density:** Not available**· Relative density** Not available**· Vapour density** Not available**· Evaporation rate** Not available**· Solubility in / Miscibility with****Water:** Not available**· Segregation coefficient (n-octanol/water):** Not available**· Viscosity:****Dynamic:** Not available.**Kinematic:** Not applicable.**· Other information** No further relevant information available.

**Material Safety Data Sheet**

Printing date 03/05/2013

Reviewed on 02/27/2013

**Trade name: CARBON BATTERIES****10 Stability and reactivity**

- **Chemical stability** Data not available
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

**11 Toxicological information**

- **Acute toxicity:**

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

1310-58-3 potassium hydroxide

Oral	LD50	273 mg/kg (rat)
------	------	-----------------

- **Primary irritant effect:**
- **on the skin:** Contact with battery contents may cause caustic effect on skin and mucous membranes.
- **on the eye:** Contact with battery contents may cause strong caustic effect.
- **Sensitization:**
  - Sensitization possible through inhalation.
  - Sensitization possible through skin contact.

**12 Ecological information**

- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
  - Water hazard class 2 (Self-assessment): hazardous for water
  - Do not allow product to reach ground water, water course or sewage system.
  - Danger to drinking water if even small quantities leak into the ground.

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:** Smaller quantities can be disposed of with household waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

**Material Safety Data Sheet**

Printing date 03/05/2013

Reviewed on 02/27/2013

**Trade name: CARBON BATTERIES****14 Transport information**

· <b>UN-Number</b> · <b>DOT, ADR, IMDG, IATA</b>	<i>Not applicable</i>
· <b>UN proper shipping name</b> · <b>DOT, ADR, IMDG, IATA</b>	<i>Not applicable</i>
· <b>Transport hazard class(es)</b> · <b>DOT, ADR, IMDG, IATA</b> · <b>Class</b> · <b>Label</b>	<i>Not applicable</i> <i>Not applicable</i>
· <b>Packing group</b> · <b>DOT, ADR, IMDG, IATA</b>	<i>Not applicable</i>
· <b>Environmental hazards:</b> · <b>Marine pollutant:</b>	<i>Not applicable</i> <i>No</i>
· <b>Special precautions for user</b> · <b>Danger code (Kemler):</b>	<i>Not applicable.</i> <i>Not applicable</i>
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	<i>Not applicable.</i>
· <b>Transport/Additional information:</b>	<i>“Dry cell” batteries are not listed as dangerous goods under ICAO, IATA, DOT, IMDG. These batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following Special Provisions; Special Provision A123 in the ICAO Technical Instructions and IATA Dangerous Goods Regulations and Special Provision 130 of the DOT and the current edition of the special provision 304 of IMDG Code (Amdt. 34-08). These regulations require these batteries to be packed in such a way to prevent short circuits or generation of a dangerous quantity of heat. In addition, the ICAO and IATA regulations require the words “Not Restricted” and “Special Provision A123” be provided on the air waybill, when an air waybill is issued. By ocean the International Maritime Organization (IMO), 2010 edition does not regulate these batteries.</i>



## Material Safety Data Sheet

Printing date 03/05/2013

Reviewed on 02/27/2013

Trade name: CARBON BATTERIES

**15 Regulatory information**

## · Sara

## · Section 355 (extremely hazardous substances):

None of the ingredients is listed.

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

7440-66-6 | zinc powder -zinc dust (pyrophoric)

## · TSCA (Toxic Substances Control Act):

All ingredients are listed.

## · 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.

## · Cancerogenity categories

## · EPA (Environmental Protection Agency)

1313-13-9	manganese dioxide	D
7440-66-6	zinc powder -zinc dust (pyrophoric)	II

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

None of the ingredients is listed.

## · NTP (National Toxicology Program)

None of the ingredients is listed.

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

None of the ingredients is listed.

## · MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

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

None of the ingredients is listed.

## · OSHA-Ca (Occupational Safety &amp; Health Administration)

None of the ingredients is listed.

## · Hazard-determining components of labeling:

manganese dioxide  
potassium hydroxide

(Contd. on page 9)

# Material Safety Data Sheet

Printing date 03/05/2013

Reviewed on 02/27/2013

**Trade name: CARBON BATTERIES**

(Contd. of page 8)

**Safety phrases:**

*Keep locked up and out of the reach of children.*

*In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.*

*Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.*

*Wear suitable protective clothing, gloves and eye/face protection.*

*In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.*

*In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).*

## 16 Other information

\*\*\*\*\*

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

### DISCLAIMER OF LIABILITY

*The information in this MSDS/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 MSDS/SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS/SDS information may not be applicable.*

\*\*\*\*\*

**\*\*End of document\*\***