



MSDS Report

No.: CANEC1200694401

Date : 13 Feb 2012

Page 1 of 1

SHEN ZHEN GREPOW BATTERY CO .LTD

WUSHIGANG.HUARONG RD,DALANGSTREET, LONGHUA,BAO AN DISTRICT, SHENZHEN,P,R,CHINA

SGS Job No. : CP12-002111-SZ
Sample Name : Ni-MH BATTERY
End Uses : Power supply
Composition/Ingredient of sample (as per client submission) : See *section 2 Composition/information on ingredients* on the MSDS report
Job Receiving Date : 02 Feb 2012
Last Information Date : 06 Feb 2012
MSDS Preparation Period : 02 Feb 2012 - 06 Feb 2012

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

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 and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at 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.



198 Kezhu Road, Sciencetech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

Material Safety Data Sheet

Printing date 02/13/2012

Reviewed on 02/03/2012

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

- **Product identifier**
- **Trade name:** Ni-MH BATTERY
- **Article number:** Not available
- **Application of the substance / the preparation:** Power supply
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** SHEN ZHEN GREPOW BATTERY CO .LTD
- **Name:** Lv Jia Ping
- **Full address:**
WUSHIGANG.HUARONG RD,DALANGSTREET, LONGHUA, BAO AN DISTRICT, SHENZHEN, P,R, CHINA
- **Phone number:** +86-755-27042803
- **FAX:** +86-755-27043744
- **Further information obtainable from:** SHEN ZHEN GREPOW BATTERY CO .LTD
- **Emergency telephone number:** +86-13510339498
- **Email:** lujiaping@grepow.com
- **Reference Number:** CP12-002111-SZ; CANEC1200694401.
- **Remark:**
* This sample is likely to be classified as article and is out of scope of a MSDS as set out in 29 CFR Part 1910.1200. This MSDS is generated for client's reference only.

2 Composition/information on ingredients

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

· **Dangerous components:**

12054-48-7	nickel dihydroxide	29.82%
7440-02-0	nickel	28.797%
7440-50-8	copper	4.955%
1310-73-2	sodium hydroxide	2.16%
21041-93-0	cobalt dihydroxide	1.924%
7439-96-5	manganese	1.357%
1310-58-3	potassium hydroxide	0.538%
1310-66-3	Lithium hydroxide	0.19%
7440-45-1	cerium	1.551%
7429-90-5	aluminium	0.659%

· **Non-dangerous components:**

7439-89-6	iron	14.568%
7439-91-0	lanthanum	10.858%
9003-07-0	Polypropylene	1.957%
32131-17-2	Nylon-66	0.449%
9002-88-4	polyethylene	0.217%

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.

(Contd. on page 2)

USA

Material Safety Data Sheet

Printing date 02/13/2012

Reviewed on 02/03/2012

Trade name: Ni-MH BATTERY

(Contd. of page 1)

· NFPA ratings (scale 0 - 4)

· HMIS-ratings (scale 0 - 4)

· Other hazards

A sealed Ni-MH 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)

Health = 3
Fire = 0
Reactivity = 0

· HMIS-ratings (scale 0 - 4)

Health = *3
Fire = 0
Reactivity = 0

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.

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 and to be sure call for a doctor.

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.

5 Firefighting 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 No further relevant information available.

· Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

· Environmental precautions:

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

(Contd. on page 3)

Material Safety Data Sheet

Printing date 02/13/2012

Reviewed on 02/03/2012

Trade name: Ni-MH BATTERY

(Contd. of page 2)

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:**

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· **Reference to other sections**

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**

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of dust.

· **Information about protection against explosions and fires:** Keep respiratory protective device available.

· **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.

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

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:**

12054-48-7 nickel dihydroxide

REL (USA)	0.015 mg/m ³ as Ni; See Pocket Guide App. A
WEL (Great Britain)	0.5 mg/m ³ as Ni

7440-02-0 nickel

PEL (USA)	1 mg/m ³
REL (USA)	0.015 mg/m ³ as Ni; See Pocket Guide App. A
TLV (USA)	1.5* 0.2** 0.1*** mg/m ³ inhal.fraction;*elemental;**insol.,***sol.compds.
WEL (Great Britain)	0.5 mg/m ³ as Ni

7440-50-8 copper

PEL (USA)	1* 0.1** mg/m ³ as Cu *dusts and mists **fume
REL (USA)	1* 0.1** mg/m ³ as Cu *dusts and mists **fume
TLV (USA)	1* 0.2** mg/m ³ *dusts and mists; **fume; as Cu
WEL (Great Britain)	Short-term value: 2** mg/m ³ Long-term value: 0.2* 1** mg/m ³ *fume **dusts and mists (as Cu)

(Contd. on page 4)

USA

Material Safety Data Sheet

Printing date 02/13/2012

Reviewed on 02/03/2012

Trade name: Ni-MH BATTERY

(Contd. of page 3)

1310-73-2 sodium hydroxide

PEL (USA)	2 mg/m ³
REL (USA)	Short-term value: C 2 mg/m ³
TLV (USA)	Short-term value: C 2 mg/m ³
WEL (Great Britain)	Short-term value: 2 mg/m ³

7439-96-5 manganese

PEL (USA)	Short-term value: C 5* ** mg/m ³ as Mn *and inorganic compounds **fume
REL (USA)	Short-term value: 3* ** mg/m ³ Long-term value: 1* ** mg/m ³ as Mn *and inorganic compounds **fume
TLV (USA)	(0.2) NIC-0.02* NIC-0.2* mg/m ³ as Mn;+ inorg. comp.;*resp.,**inh. fraction:NIC-A4

1310-58-3 potassium hydroxide

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

· **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.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.

· **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.

· **Eye protection:**



Tightly sealed goggles

USA

(Contd. on page 5)

Material Safety Data Sheet

Printing date 02/13/2012

Reviewed on 02/03/2012

Trade name: Ni-MH BATTERY

(Contd. of page 4)

9 Physical and chemical properties

- **General Information**

- **Appearance:**

- **Form:** cylindrical

- **Color:** silver

- **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 selfigniting.

- **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:** 360 g/cm³ (004.2 lbs/gal)

- **Relative density** 360 g/cm³ (004.2 lbs/gal)

- **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 available

- **Other information** No further relevant information available.

10 Stability and reactivity

- **Chemical stability** Stable

- **Possibility of hazardous reactions**

- **Danger of explosion.**

- **Danger of causing burns.**

- **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:**

1310-73-2 sodium hydroxide

Oral LD50 2000 mg/kg (rat)

(Contd. on page 6)

Material Safety Data Sheet

Printing date 02/13/2012

Reviewed on 02/03/2012

Trade name: Ni-MH BATTERY

(Contd. of page 5)

7439-96-5 manganese

Oral LD50 9000 mg/kg (rat)

7439-89-6 iron

Oral LD50 30000 mg/kg (rat)

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.
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 3 (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms

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.

14 Transport information

- | | |
|---------------------------------------|-----------------|
| · UN-Number | |
| · DOT, ADR, IMDG, IATA | Not applicable |
| · UN proper shipping name | |
| · DOT, ADR, IMDG, IATA | Not applicable |
| · Transport hazard class(es) | |
| · DOT, ADR, IMDG, IATA | |
| · Class | Not applicable |
| · Label | Not applicable |
| · Packing group | |
| · DOT, ADR, IMDG, IATA | Not applicable |
| · Environmental hazards: | |
| · Marine pollutant: | No |
| · Special precautions for user | Not applicable. |

(Contd. on page 7)

Material Safety Data Sheet

Printing date 02/13/2012

Reviewed on 02/03/2012

Trade name: Ni-MH BATTERY

(Contd. of page 6)

· Danger code (Kemler):	Not applicable
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	“Dry cell” batteries are not listed as dangerous goods under ICAO, IATA, DOT. 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. 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.

15 Regulatory information

· Sara

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

None of the ingredients is listed.

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

12054-48-7	nickel dihydroxide
7440-02-0	nickel
7440-50-8	copper
7439-96-5	manganese
7429-90-5	aluminium

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

12054-48-7	nickel dihydroxide
7440-02-0	nickel
7439-89-6	iron
7439-91-0	lanthanum
7440-50-8	copper
1310-73-2	sodium hydroxide
9003-07-0	Polypropylene
21041-93-0	cobalt dihydroxide
7440-45-1	cerium
7439-96-5	manganese
7429-90-5	aluminium
1310-58-3	potassium hydroxide
32131-17-2	Nylon-66
9002-88-4	polyethylene

· **Proposition 65**· **Chemicals known to cause cancer:**

12054-48-7	nickel dihydroxide
7440-02-0	nickel

(Contd. on page 8)

USA

Material Safety Data Sheet

Printing date 02/13/2012

Reviewed on 02/03/2012

Trade name: Ni-MH BATTERY

(Contd. of page 7)

· **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)**

7440-50-8	copper	D
7439-96-5	manganese	D

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

12054-48-7	nickel dihydroxide	1
7440-02-0	nickel	2B
9003-07-0	Polypropylene	3
9002-88-4	polyethylene	3

· **NTP (National Toxicology Program)**

12054-48-7	nickel dihydroxide	K
7440-02-0	nickel	R

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

12054-48-7	nickel dihydroxide	A1
7440-02-0	nickel	A5
7429-90-5	aluminium	A4

· **MAK (German Maximum Workplace Concentration)**

12054-48-7	nickel dihydroxide	1
7440-02-0	nickel	1

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

12054-48-7	nickel dihydroxide	
7440-02-0	nickel	

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

None of the ingredients is listed.

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

· **Remark**

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