

# Safety Data Sheet

## 1907/2006/EC, 1272/2008/EC

Printing date 16.01.2013

Revision: 15.01.2013

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

- **Product identifier**

- **Trade name:** Ni-MH Battery

- **Article number:** Not available

- **Registration number:** Not available

- **Relevant identified uses of the substance or mixture and uses advised against**

- **Application of the substance / the preparation:** Household & Industrial power

- **Details of the supplier of the safety data sheet**

- **Manufacturer/Supplier:** BETTERPOWER BATTERY CO., LTD

- **Name:** Liu He Ping

- **Full address:**

NO.11 AND 26 BLDG, DALANG TONGFU VILLAGE INDUSTRY ZONE, LONGHUA TOWN, BAOAN DISTRICT, SHENZHEN GUANGDONG. P.R CHINA

- **Phone number:** +86-755-28078690

- **FAX:** +86-755-28078663

- **Further information obtainable from:** BETTERPOWER BATTERY CO., LTD

- **Emergency telephone number:** +86-13632715260

- **Email:** betterpower-pmc01@hotmail.com

- **Reference Number:** CP13-001107-GZ; CANEC1300402601

- **Remark:**

\* This sample is likely to be classified as article with substances not intended to be released and is out of scope of a SDS as set out in Regulation (EC) No 1907/2006. This SDS is generated for client's reference only.

### 2 Hazards identification

- **Classification of the substance or mixture**

- **Classification according to Regulation (EC) No 1272/2008**

The product is not classified according to the CLP regulation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

The product is not classified according to the Directive 67/548/EEC or 1999/45/EC.

- **Information concerning particular hazards for human and environment:** Not applicable.

- **Classification system:**

The classification is according to the latest edition of the Directive 67/548/EEC, 1999/45/EC and Regulation (EC) No. 1272/2008, and extended by company and literature data.

- **Additional information:**

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:

Classification according to Regulation (EC) No 1272/2008:

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 1A H350i May cause cancer by inhalation.

Repr. 1B H360D May damage the unborn child.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC:

R49-61-48/23: May cause cancer by inhalation. May cause harm to the unborn child. Toxic: danger of serious damage to health by prolonged exposure through inhalation.

R35: Causes severe burns.

R20/22-40-68: Harmful by inhalation and if swallowed. Limited evidence of a carcinogenic effect.

Possible risk of irreversible effects.

R42/43: May cause sensitisation by inhalation and skin contact.

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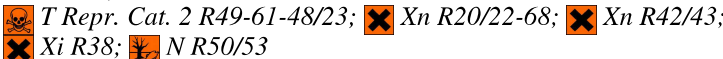

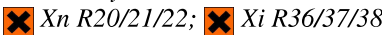
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements**  
Safety data sheet available on request.
- **Additional information:**  
Important! This product contains substance that is of restricted use under Annex XVII of Regulation (EC) No.1907/2006. For details, please refer to Section 15 and 16 of this Safety Data Sheet.
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:**  
Mixture of the substances listed below with nonhazardous additions.  
For the wording of listed risk phrases refer to section 16.

- **Dangerous components:**

CAS: 7440-02-0 EINECS: 231-111-4 EU number: 028-002-00-7	nickel  Carc. Cat. 3 Carc. 2, H351; STOT RE 1, H372; Skin Sens. 1, H317	45,0%
CAS: 12054-48-7 EINECS: 235-008-5 EU number: 028-008-00-X	nickel dihydroxide  Carc. Cat. 1, Muta. Cat. 3 Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1A, H350i; Repr. 1B, H360D; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Irrit. 2, H315; Skin Sens. 1, H317	33,0%
CAS: 1310-58-3 EINECS: 215-181-3 EU number: 019-002-00-8	potassium hydroxide  Skin Corr. 1A, H314; Acute Tox. 4, H302	15,0%
CAS: 21041-93-0 EINECS: 244-166-4	cobalt dihydroxide  Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	7,0%

- **Remark:**  
Nickel dihydroxide (CAS:12054-48-7)  
Synonym: Nickel hydroxide

### 4 First aid measures

- **Description of first aid measures**  
If exposure to internal materials within battery due to damaged outer casing, the following actions are recommended.
- **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.

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- **After swallowing:** *If symptoms persist consult doctor.*
- **Information for 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 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
*CO<sub>2</sub> 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.*
- **Advice for firefighters**
- **Protective equipment:** *No special measures required.*

### 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 source.  
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:** *Pick up mechanically.*
- **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:**  
*Open and handle receptacle with care.  
Prevent formation of dust.*
- **Information about fire - and explosion protection:** *Keep respiratory protective device available.*
- **Storage:**
- **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 container tightly sealed.*
- **Specific end use(s):** *No further relevant information available.*

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** *No further data; see item 7.*
- **Control parameters**

<b>Ingredients with limit values that require monitoring at the workplace:</b>	
7440-02-0 nickel	
PEL (USA)	1 mg/m <sup>3</sup>

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REL (USA)	0,015 mg/m <sup>3</sup> as Ni; See Pocket Guide App. A
TLV (USA)	1,5* 0,2** 0,1*** mg/m <sup>3</sup> inhal.fraction;*elemental;**insol.,***sol.compds.
MAK (Germany)	einatembare Fraktion; vgl.Abschn.XIII
<b>12054-48-7 nickel dihydroxide</b>	
REL (USA)	0,015 mg/m <sup>3</sup> as Ni; See Pocket Guide App. A
<b>1310-58-3 potassium hydroxide</b>	
REL (USA)	C2 mg/m <sup>3</sup>
TLV (USA)	Short-term value: C 2 mg/m <sup>3</sup>

- **DNELs:** Not available
- **PNECs:** Not available
- **Additional information:** The lists valid during the making were used as basis.

- **Exposure controls**

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

- **Personal protective equipment**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Store protective clothing separately.

- **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

- **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:** Safety glasses

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General information**

- **Appearance**

<b>Form:</b>	Solid
<b>Colour:</b>	Silver grey
<b>Odour:</b>	Odourless

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· <b>Odour threshold:</b>	Not available
· <b>pH-value:</b>	Not available
· <b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Not available
<b>Boiling point/Boiling range:</b>	Not available
· <b>Freezing point:</b>	Not available
· <b>Flash point:</b>	Not available
· <b>Flammability (solid, gaseous):</b>	Not available
· <b>Auto-Ignition temperature:</b>	Not available
· <b>Decomposition temperature:</b>	Not available
· <b>Self-igniting:</b>	Product is not selfigniting.
· <b>Explosive properties:</b>	Product does not present an explosion hazard.
· <b>Explosion limits</b>	
<b>Lower:</b>	Not available
<b>Upper:</b>	Not available
· <b>Oxidizing properties:</b>	Not available
· <b>Vapour pressure:</b>	Not available
· <b>Density:</b>	Not available
· <b>Relative density:</b>	Not available
· <b>Vapour density:</b>	Not available
· <b>Evaporation rate:</b>	Not available
· <b>Solubility in / Miscibility with water:</b>	Not available
· <b>Partition coefficient (n-octanol/water):</b>	Not available.
· <b>Viscosity</b>	
<b>Dynamic:</b>	Not available.
<b>Kinematic:</b>	Not available
· <b>Other information:</b>	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.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**

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

**1310-58-3 potassium hydroxide**

Oral	LD50	273 mg/kg (rat)
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- **Primary irritant effect**
- **on the skin:** Contact with battery contents may cause strong caustic effect on skin and mucous membranes.
- **on the eye:** Contact with battery contents may cause strong caustic effect.

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- **Sensitization:**  
Sensitization possible through skin contact.  
Sensitization possible through inhalation.
- **Additional toxicological information:**  
The product shows the following dangers if leakage occurs according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
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 if inhaled.
- **Toxicokinetics, metabolism and distribution:** No further relevant information available
- **Acute effects (acute toxicity, irritation and corrosivity):** No further relevant information available
- **Repeated dose toxicity:** No further relevant information available.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**  
No further relevant information available.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Behaviour in environmental systems:** No further relevant information available
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Additional ecological information**
- **General notes:**  
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
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
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- |                                  |                |
|----------------------------------|----------------|
| · <b>UN-Number</b>               |                |
| · <b>ADR</b>                     | Not applicable |
| · <b>IMDG, IATA</b>              | UN3496         |
| · <b>UN proper shipping name</b> |                |
| · <b>ADR</b>                     | Not applicable |

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· <b>IMDG, IATA</b>	BATTERIES, NICKEL-METAL HYDRIDE
· <b>Transport hazard class(es)</b>	
· <b>ADR</b>	
· <b>Class</b>	Not applicable
· <b>Label</b>	-
· <b>IMDG, IATA</b>	
· <b>Class</b>	9 Miscellaneous dangerous substances and articles.
· <b>Label</b>	9
· <b>Packing group</b>	
· <b>ADR, IMDG, IATA</b>	Not applicable
· <b>Environmental hazards</b>	Product contains environmentally hazardous substances: nickel dihydroxide
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user:</b>	Not applicable.
· <b>Danger code (Kemler):</b>	-
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:</b>	Not applicable.

### 15 Regulatory information

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

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

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

· **National regulations**

· **Waterhazard class:** Water hazard class 3 (Self-assessment): extremely hazardous for water.

· **Other regulations, limitations and prohibitive regulations**

· **SVHC Candidate List of REACH Regulation Annex XIV Authorisation (18/6/2012)**

None of the ingredients is listed

· **REACH Regulation Annex XVII Restriction (19/9/2012)** 7440-02-0 nickel

· **REACH Regulation Annex XIV Authorisation List (14/2/2012)** None of the ingredients is listed

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

· **Recommended restriction of use**

7440-02-0 nickel

REACH Annex XVII Restricted-27

1. Shall not be used:

(a) in any post assemblies which are inserted into pierced ears and other pierced parts of the human body unless the rate of nickel release from such post assemblies is less than 0,2 µg/cm<sup>2</sup>/week (migration limit);

(b) in articles intended to come into direct and prolonged contact with the skin such as:

- earrings,

- necklaces, bracelets and chains, anklets, finger rings,

- wrist-watch cases, watch straps and tighteners,

- rivet buttons, tighteners, rivets, zippers and metal marks, when these are used in garments, if the rate of nickel release from the parts of these articles coming into direct and prolonged contact with the skin is greater than 0,5 µg/cm<sup>2</sup>/week.

(c) in articles referred to in point (b) where these have a non-nickel coating unless such coating is sufficient to ensure that the rate of nickel release from those parts of such articles coming into direct and prolonged contact with the skin will not exceed 0,5 µg/cm<sup>2</sup>/week for a period of at least two years of normal use of the

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article.

2. Articles which are the subject of paragraph 1 shall not be placed on the market unless they conform to the requirements set out in that paragraph.

3. The standards adopted by the European Committee for Standardisation (CEN) shall be used as the test methods for demonstrating the conformity of articles to paragraphs 1 and 2.

**Relevant phrases**

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H341 Suspected of causing genetic defects.

H350i May cause cancer by inhalation.

H351 Suspected of causing cancer.

H360D May damage the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R20/22 Harmful by inhalation and if swallowed.

R22 Harmful if swallowed.

R35 Causes severe burns.

R36/37/38 Irritating to eyes, respiratory system and skin.

R38 Irritating to skin.

R40 Limited evidence of a carcinogenic effect.

R42/43 May cause sensitisation by inhalation and skin contact.

R43 May cause sensitization by skin contact.

R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

R49 May cause cancer by inhalation.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R61 May cause harm to the unborn child.

R68 Possible risk of irreversible effects.

\*\*\*\*\*

The contents and format of this MSDS/SDS are in accordance with REGULATION (EC) No. 1272/2008, (EC) No. 1907/2006, REGULATION (EU) No. 453/2010 and EU Commission Directive 1999/45/EC, 67/548/EEC.

**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.

**Remark:**

\* This sample is likely to be classified as article with substances not intended to be released and is out of scope of a SDS as set out in Regulation (EC) No 1907/2006. This SDS is generated for client's reference only.

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**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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*DNEL: Derived No-Effect Level (REACH)*

*PNEC: Predicted No-Effect Concentration (REACH)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

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