

**MATERIAL SAFETY DATA SHEET**

Creation Date : 30 Dec 2016

Last Update : 01/01/2017

MSDS NO. :GREPOW 20170102

Product name Nickel Metal Hydride Battery :

The batteries referenced herein are exempt articles and are not subject to the OSHA Hazard Communication Standard requirement. This safety data sheet is provided as a service to our customers.

**1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND THE COMPANY / UNDERTAKING**

Identification of the substance/preparation

Product name Nickel Metal Hydride Battery

Use of the Substance/Preparation Battery

Company/Undertaking Identification

Supplier

Shenzhen Grepow Battery Co.,Ltd

Wushigang,Chuangyi Rd.,Longhua Village,Bao An District,  
Shenzhen,P.R.China



Emergency telephone number : 086-0755-27043782

**2. COMPOSITION / INFORMATION ON INGREDIENTS**

The Nickel Metal Hydride battery is hermetically sealed ; among its components, the following ones could potentially be hazardous upon release.

Product name Nickel Metal Hydride Battery

Chemical Name 化学品名称	CAS No. (Priority) 化学文摘社登记号码 (优先)	Composition 成份 (in % by weight) (重量百分比)	EC No. (if applicable) EC 号码 (如适用)
1. Nickel hydroxide	12054-48-7	29.820	235-008-5
2. Cobalt hydroxide	21041-93-0	1.924	244-166-4
3. Nickel	7440-02-0	28.797	231-111-4
4. Lanthanum	7439-91-0	10.858	231-099-0
5. Cerium	7440-45-1	1.551	231-154-9
6. Aluminum	7429-90-5	0.659	
7. Poly 【 imino(1,6-dioxo-1,6-hexanediy)imino-1,6-hexanediy】	32131-17-2	0.449	
8. Manganese	7439-96-5	1.357	
9. Iron	7439-89-6	14.568	
10. Potassium hydroxide	1310-58-3	0.538	215-181-3
11. Sodium hydroxide	1310-73-2	2.160	
12. Lithium hydroxide monohydrate	1310-66-3	0.190	
13. Copper	7440-50-8	4.955	
14. Polypropylene	9003-07-0	1.957	
15. Polyethylene	9002-88-4	0.217	

For the full text of the R phrases mentioned in this Section, see Section 15.

**3. HAZARDS IDENTIFICATION**

Classification Carcinogenic Category 3 R40, sensitizing R42/43, Xn R20/22, C R35, N R50-53

Most important hazards Limited evidence of a carcinogenic effect. Causes severe burns Harmful by inhalation and if swallowed. May cause sensitization by



**Further information** The Nickel Metal Hydride is a sealed battery which is not hazardous when used according to recommendations. Under normal conditions of use, the integrity of the battery casing and security vent are maintained, the ingredients are not expected to pose a significant risk to man or the environment. (circuit) and in case of a bad functioning, some electrolyte leakage can occur by the safety vent. In these cases, the risk is the caustic nature of electrolyte (potassium hydroxide). The classification above is based on the contents being considered as a preparation in accordance with Directive 1999/45/EC

#### 4. FIRST AID MEASURES

**General advice**

Show this safety data sheet to the doctor in attendance.

*The information below refers to exposure to the ingredients.*

**Inhalation**

Immediate medical attention is required. Move to fresh air. If symptoms persist, call a physician.

**Skin contact**

Immediate medical attention is required. Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. If skin irritation persists, call a physician.

**Eye contact**

Immediate medical attention is required. Remove contact lenses. Rinse immediately with plenty of water for at least 15 minutes.

**Ingestion**

Immediate medical attention is required. Gently wipe or rinse the inside of the mouth with water. Give small amounts of water to drink. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Centre immediately.

#### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**

Dry powder, carbon dioxide (CO<sub>2</sub>), sand.

**Extinguishing media which must not be used for safety reasons**

Water, water spray.

**Specific hazards**

Risk of receptacle bursting.

**Special protective equipment for firefighters**

In the event of fire, wear self contained breathing apparatus. Wear personal protective equipment.

**Hazardous decomposition products**

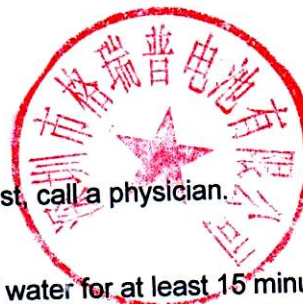
Nickel and cobalt compounds.

#### 6. ACCIDENTAL RELEASE MEASURES

*The information below refers to exposure to the ingredients.*

**Personal precautions**

Use personal protective equipment.



**GREPOW**

NI-MH RECHARGEABLE

Avoid contact with skin and eyes.

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**Environmental precautions**

Prevent further leakage or spillage if safe to do so.  
Do not allow material to contaminate ground water system.

**Methods for cleaning up**

Pick up and transfer to properly labelled containers.  
Dispose of in accordance with local regulations.

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**7. HANDLING AND STORAGE**

**Handling**

**Technical measures/Precautions**

No special technical protective measures required.  
Do not obstruct safety vent by soldering or welding tabs on the positive top.

**Safe handling advice**

Avoid contact with skin and eyes.  
Use personal protective equipment.

**Storage**

**Technical measures/Storage conditions**

Keep in a dry, cool and well-ventilated place, preferably in the temperature range of +5 to +25°C at 65%(+5%) relative humidity.  
Keep away from heat and sources of ignition.  
Ensure battery terminals are protected during storage.



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**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Occupational exposure controls**

**Engineering measures**

Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**

Not required under normal use.

**The information below refers to exposure to the ingredients.**

**Respiratory protection**

Wear a positive-pressure supplied-air respirator with full facepiece.

**Hand protection**

Neoprene gloves (EN374).

**Eye protection**

Safety glasses with side-shields conforming to EN166.

**Skin and body protection**

Boots, apron, protective suit.

**Hygiene measures**

General industrial hygiene practice.

**Environmental exposure controls**

**The information below refers to exposure to the ingredients**

Prevent product from entering drains.  
Do not allow material to contaminate ground water system.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**



**GREPOW**

Ni-MH RECHARGEABLE

**General Information****Form** battery (sealed unit)**Colour** not applicable**Odour** odourless

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**Important Health Safety and Environmental Information**  
not applicable

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**10. STABILITY AND REACTIVITY****Stability**

Stable under normal conditions.

**Hazardous polymerisation**

Hazardous polymerisation does not occur.

**Conditions to avoid**

Keep away from heat and sources of ignition.

**Materials to avoid**

Exposure to moisture.

**Hazardous decomposition products**

Nickel and cobalt compounds.

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**11. TOXICOLOGICAL INFORMATION****The information below refers to exposure to the ingredients****Local effects**

Causes severe burns. Risk of serious damage to eyes. Harmful by inhalation and if swallowed.

**Long term toxicity**

No data available. Avoid repeated exposure.

**Specific effects**

May cause sensitization by inhalation and skin contact.

Limited evidence of a carcinogenic effect.

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**12. ECOLOGICAL INFORMATION**

If used as directed, and if the integrity of the battery casing and security vent are maintained, the ingredients are not expected to pose a significant risk to the environment.

**Mobility**

No data available.

**Persistence and degradability**

No data available.

**Ecotoxicity effects****The information below refers to exposure to the ingredients**

Nickel hydroxide: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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**13. DISPOSAL CONSIDERATIONS****Waste from residues / unused products**

Dispose of in accordance with local regulations. It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations. Should not be released into the environment.

**Contaminated packaging**

Not applicable.

**Further information**

EWC waste disposal No: 200133 - batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries

Never incinerate Ni-MH batteries.

Never dispose Ni-MH batteries as landfill.

Nickel-Metal Hydride batteries - which in some countries may not be subject to collection &amp; recycling and/or disposal requirements - do however contain recyclable materials and GREPOW recommends



**14. TRANSPORT INFORMATION**

The Grepow rechargeable Ni-MH batteries are considered to be "dry cell" batteries and are not subject to dangerous goods regulation for the purpose of transportation by the U.S. Department of Transportation (DOT), the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) or the International Maritime Dangerous Goods regulations (IMDG). The only DOT requirement for shipping Nickel Metal Hydride batteries is Special Provision 130 which states: "Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals)." IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting. The International Maritime Dangerous Goods Code (IMDG) regulate them for ocean transportation under Special provision 304 which says "Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to the provisions of this Code provided the batteries are securely packed and protected against short-circuits. Examples of such batteries are: alkali-manganese, zinc carbon, nickel metal hydride and nickel-cadmium batteries."

We hereby certify that the consignment is not classified as dangerous goods under the current edition of the IATA Dangerous Goods Regulations one for A123 under 58<sup>th</sup> Edition & one for A199 under 58<sup>th</sup> Edition. and all applicable cameral and governmental regulations ". By ocean the International Maritime Organization (IMO) regulates them as a Class 9 dangerous good under UN 3496 and Special Provision 117 and 963 which allows a total quantity of less than 100 kg gross mass to be transported as non-regulated, This battery match the requirements of SPECIAL PROVISION 963.

**15. REGULATORY INFORMATION**

**Symbol** C – Corrosive  
N – Dangerous for the environment

**Text of R phrases** mentioned in Section 2  
 R22 - Harmful if swallowed.  
 R20/22 - Harmful by inhalation and if swallowed.  
 R35 - Causes severe burns  
 R40 - Limited evidence of a carcinogenic effect.  
 R42/43 - May cause sensitization by inhalation and skin contact.  
 R43 - May cause sensitization by skin contact.  
 R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**16. OTHER INFORMATION**

**S-phrases** S 1/2 - Keep locked up and out of the reach of children.  
 S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.  
 S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
 S60 - This material and its container must be disposed of as hazardous waste.  
 S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.