

# Safety Data Sheet

According to HCS-2012 APPENDIX D TO §1910.1200

Version: 2.0/EN  
Product name: Ni-MH Battery

Revision date: 2019.01.01  
Issue date: 2019.09.10

## 1. Identification

### (a) Product identifier

Product name: Ni-MH Battery

### (b) Other means of identification

Product description: Model: Ni-MH AAA300mAh  
Nominal Voltage: 1.2V  
Typical Capacity: 300mAh

### (c) Recommended use of the chemical and restrictions on use

Recommended use: No information available.  
Restriction on use: No information available.

### (d) Details of the supplier of the product

Company name: XINXIANG BOYAN POWER SOURCE CO.,LTD  
Address: XINCHAO DAGUANYUAN, HUIXIAN CITY, HENAN, CHINA  
E-mail: 15783825@qq.com  
Telephone: +86-18637355269

### (e) Emergency phone number

+86-15090409652

## 2. Hazard(s) identification

### (a) Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)  
This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

### (b) GHS Label elements, including precautionary statements

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## Emergency Overview

**Signal word**

**Danger**

**Hazard Statements**

Harmful if swallowed  
Harmful in contact with skin  
Causes severe skin burns and eye damage  
Suspected of causing cancer  
Causes damage to organs through prolonged or repeated exposure



This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist.

**Appearance** Green

**Physical State** Solid

**Odor** Odorless

**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

Immediately call a POISON CENTER or doctor/physician  
Specific treatment (see supplemental first aid instructions on this label)

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Immediately call a POISON CENTER or doctor/physician

**Skin**

Call a POISON CENTER or doctor/physician if you feel unwell  
Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

**Inhalation**

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IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Immediately call a POISON CENTER or doctor/physician

## Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Do NOT induce vomiting

## Precautionary Statements - Storage

Store locked up

## Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

### (c) Hazards not otherwise classified (HNOC)

Not applicable

### (d) Unknown Toxicity

14.4 % of the mixture consists of ingredient(s) of unknown toxicity

### (e) Other information

Very toxic to aquatic life with long lasting effects

### (f) Interactions with Other Chemicals

No information available.

## 3. Composition/information on ingredients

### (a) Mixtures information

Chemical name	CAS No.	Concentration%
Nickel hydroxide	12054-48-7	35
Cobalt	7440-48-4	4
Potassium hydroxide	1310-58-3	3
Polypropylene	9003-07-0	8
Hydrogen atom	12385-13-6	37
Iron	7439-89-6	10
Poly[imino(1-oxo-1,12-dodecanediyl)], (nylon 12 chips)	24937-16-4	3

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## 4. First-aid measures

### *(a) Description of first aid measures*

<b>General Advice</b>	First aid is upon rupture of sealed battery.
Eye contact:	Show this safety data sheet to the doctor in attendance. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.
Skin contact:	Remove contaminated clothes and rinse the skin with plenty of water. Get medical advice / attention if you feel unwell.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen. Get medical advice / attention if you feel unwell.
Ingestion:	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get medical aid.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### *(b) Most important symptoms/effects, acute and delayed*

Contact with internal components may cause allergic skin sensitization (rash) and irritate eyes, skin, nose, throat, respiratory system. Cobalt and Cobalt compounds are considered to be possible human carcinogen(s).

### *(c) Immediate medical attention and special treatment*

No information available.

## 5. Fire-fighting measures

### *(a) Extinguishing media*

Suitable extinguishing media:	Use foam, dry powder or dry sand, CO <sub>2</sub> as appropriate.
Unsuitable extinguishing media:	No information available.

### *(b) Special hazards arising from the chemical*

Under fire conditions, batteries may burst and release hazardous decomposition products when exposed to a fire situation. This could result in the release of flammable or corrosive materials. Hazardous combustion products: CO, CO<sub>2</sub>, Metal oxides, Irritating fumes

### *(c) Hazardous Combustion Products*

Carbon oxides.

### *(d) Explosion Data*

Sensitivity to Mechanical Impact: No.  
Sensitivity to Static Discharge: No.

### *(f) Special protective equipment and precautions for fire-fighters*

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Firefighters must wear fire resistant protective equipment and appropriate breathing apparatus. The staff must equip with filtermask (full mask) or isolated breathing apparatus. The staff must wear the clothes which can defense the fire and the toxic gas. Put out the fire in the upwind direction. Remove the container to the open space as soon as possible. Spray water on the containers in the fireplace to keep them cool until finish extinguishment.

## 6. Accidental release measures

### **(a) Personal precautions, protective equipment and emergency procedures**

Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### **(b) Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

### **(c) Methods and materials for containment and cleaning up**

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters. Pick up and transfer to properly labeled containers.

## 7. Handling and storage

### **(a) Precautions for safe handling**

Always follow the warning information on the batteries and in the manuals of devices. Only use the recommended battery types. Keep batteries away from children. For devices to be used by children, the battery casing should be protected against unauthorized access. Unpacked batteries shall not lie about in bulk. In case of battery change always replace all batteries by new ones of identical type and brand. Do not swallow batteries. Do not throw batteries into water. Do not throw batteries into fire. Avoid deep discharge. Do not short-circuit batteries. Use recommended charging time and current.

### **(b) Conditions for safe storage, including any incompatibilities**

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials. It is at  $-10^{\circ}\text{C} \sim +45^{\circ}\text{C}$  for long period storage. Do not storage the Battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.

## 8. Exposure controls/personal protection

### **(a) Control parameters**

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## Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nickel hydroxide 12054-48-7	TWA: 0.2 mg/m <sup>3</sup> Ni inhalable fraction	TWA: 1 mg/m <sup>3</sup> Ni (vacated) TWA: 1 mg/m <sup>3</sup> Ni	IDLH: 10 mg/m <sup>3</sup> Ni TWA: 0.015 mg/m <sup>3</sup> except Nickel carbonyl Ni
Potassium hydroxide 1310-58-3	Ceiling: 2 mg/m <sup>3</sup>	(vacated) Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>

ACGIH TLV: American Conference of Governmental Industrial Hygienists -Threshold Limit Value

OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

### (b) Appropriate engineering controls

**Engineering Measures:** 1.Showers  
2.Eyewash stations  
3.Ventilation systems

### (c) Individual protection measures, such as personal protective equipment

**Eye/Face Protection:** Not necessary under normal conditions, wear safety glasses if handling an open or leaking battery.

**Skin and body Protection:** Not necessary under normal conditions, Wear protective gloves and protective clothing such as long sleeved clothing, impervious gloves, chemical resistant apron, and antistatic boots if handling an open or leaking battery.

**Respiratory Protection:** Not necessary under normal conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink, or smoke in work area. Maintain good housekeeping.

## 9. Physical and chemical properties

(a) Appearance	Green Solid
(b) Odor	Odorless
(c) Odor threshold	No data available.
(d) pH	No data available.
(e) Melting point/freezing point	No data available.
(f) Initial boiling point and boiling range	No data available.
(g) Flash point	No data available.
(h) Evaporation rate	No data available.
(i) Flammability	No data available.
(j) Upper/lower flammability or explosive limits	No data available.

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(k) Vapor pressure	No data available.
(l) Vapor density	No data available.
(m) Relative density	No data available.
(n) Solubility(ies)	Insoluble in water.
(o) Partition coefficient: n-octanol/water	No data available.
(p) Auto-ignition temperature	No data available.
(q) Decomposition temperature	No data available.
(r) Viscosity	No data available.

## 10. Stability and reactivity

### **(a) Reactivity**

Stable under recommended storage and handling conditions.

### **(b) Chemical stability**

Stable under normal conditions.

### **(c) Possibility of hazardous reactions**

When heated above 150°C the risk of rupture occurs. Due to special safety construction, rupture implies controlled release of pressure without ignition.

### **(d) Conditions to avoid**

Do not subject the battery to mechanical shock. Keep away from open flames, high temperature.

### **(e) Incompatible materials**

Strong oxidizer, strong acid.

### **(f) Hazardous decomposition products**

Under fire conditions, the electrode materials can form carcinogenic nickel and cobalt oxides.

## 11. Toxicological information

### **(a) Information on the likely routes of exposure**

Inhalation: Inhalation of a large number of vapors or fumes released due to heat may cause respiratory.

Ingestion: Ingestion of battery contents may cause mouth, throat and intestinal burns and damage.

Skin contact: Contact with battery electrolyte may cause burns and skin irritation.

Eye contact: Contact with battery electrolyte may cause burns. Eye damage is possible.

Under normal conditions release of ingredients does not occur. If accidental release occurs see information in section 4. Swallowing of a battery can be harmful. Call the local Poison Control Centre for advice and follow-up.

### **(b) Information on toxicological characteristics**

**Acute toxicity:** No data available.

**Skin corrosion/irritation:** The liquid in the battery irritates.

**Serious eye damage/irritation:** The liquid in the battery irritates.

**Respiratory sensitization:** The liquid in the battery may cause sensitization to some person.

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<b>Skin sensitization:</b>	The liquid in the battery may cause sensitization to some person.
<b>Carcinogenicity:</b>	No data available.
<b>Germ Cell Mutagenicity:</b>	No data available.
<b>Reproductive Toxicity:</b>	No data available.
<b>STOT-Single Exposure:</b>	No data available.
<b>STOT-Repeated Exposure:</b>	No data available.
<b>Aspiration Hazard:</b>	No data available.

***(c) Delayed and immediate effects as well as chronic effects from short and long-term exposure***

<b>Sensitization:</b>	No data available.
<b>Mutagenic Effects:</b>	No data available.
<b>Carcinogenicity:</b>	No data available.
<b>Reproductive Toxicity:</b>	No data available.
<b>Chronic Toxicity:</b>	No data available.
<b>Target Organ Effects:</b>	No data available.
<b>Aspiration Hazard:</b>	No data available.

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## 12. Ecological information

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***(a) Ecotoxicity***

Water hazard class 1(Self-assessment): slightly hazardous for water.

***(b) Persistence and Degradability***

No information available.

***(c) Bioaccumulative potential***

No information available.

***(d) Mobility in soil***

No information available.

***(e) Other adverse effects***

No information available.

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## 13. Disposal considerations

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***Safe handling and methods of disposal***

Disposal should be in accordance with applicable regional, national and local laws and regulations.  
Local regulations may be more stringent than regional or national requirements.



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Product disposal recommendation: Observe local, state and federal laws and regulations.

Packaging disposal recommendation: Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Containers may be recycled or re-used. Observe local, state and federal laws and regulations.

The potential effects on the environment and human health of the substances used in batteries and accumulators; the desirability of not disposing of waste batteries and accumulators as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling.

## 14. Transport information

According to 2019 IATA Dangerous Goods Regulations 60th Edition and IMO IMDG Code (inc Amdt 39-18).

- (a) Not Restricted good for transportation
- (b) Separate nickel metal hydride batteries when shipping to prevent short-circuiting, they should be packed in strong for support during transport, take in a cargo of them without falling, dropping, and breakage
- (c) Prevent collapse or cargo piles and wet by rain, the container must be handled carefully
- (d) Do not give shocks that result in a mark of hitting on a cell
- (e) Please refer to Section 7 - Handling and storage also

UN No.	3496	
Name and description	Batteries, nickel-metal hydride	
Class or division	9	
Un packing group	N/A	
Excepted quantities	N/A	
Limited quantities	Forbidden	
Special provision	A199	
Packing	Packing instruction	N/A
	Special packing provisions	N/A

## 15. Regulatory information

With regard to transport, the following regulations are cited and considered:

- The International Civil Aviation Organization (ICAO) Technical Instructions.
- The International Air transport Association (IATA) Dangerous Goods Regulations.
- The International Maritime Dangerous Goods (IMDG) Code.
- The Office of Hazardous Materials Safety within the US Department of Transportation (DOT)
- Research and Special Programs Administration (RSPA)

## 16. Other information, including date of preparation or last revision

### (a) Preparation and revision information

Date of previous revision: 2015.04.29

Date of this revision: 2019.01.01

Revision summary: The Second New SDS

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## **(b) Abbreviations and acronyms**

TSCA:	Toxic Substances Control Act, The American chemical inventory.
DSL	Domestic Substances List
EINECS:	European Inventory of Existing Commercial chemical Substances
ENCS	Japanese Existing and New Chemical Substances
ECL:	Existing Chemicals List, the Korean chemical inventory.
IECSC:	Inventory of existing chemical substances in China.

## **(c) Disclaimer**

Because all of our batteries are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard. The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.

----- End of the SDS -----

Very truly yours,



Ella Qiu  
Engineer  
Engineering Services



Reviewed By  
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