

## Safety Data Sheet (SDS)

The content and format of this SDS is accordant with 29 CFR 1910.1200 (OSHA standard)

### 1. Identification of the substance/preparation and of the company/undertaking

**Product details:**

**Product name:** Ni-MH rechargeable battery (AA300mAh AA400mAh AA450mAh AA600mAh AA800mAh AA1000mAh AA1200mAh AA1600mAh AA1800mAh AAA300mAh AAA400mAh AAA450mAh AAA600mAh 2-3AAA300mAh)

**Recommended use of the chemical and restrictions on use:** Power supply. Restrictions on use: Do NOT use it in an application which may contaminate food or do harm to human health.

**Manufacturer/Supplier:** XINXIANG JINHONG COMMERCIAL AND TRADE CO., LTD.

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### 2. Hazards identification

**GHS classification** (for contact with leakage from rupture):

Physical hazards:	Not classified	
Health hazards:	Skin corrosion/irritation	Category 2
	Sensitization, skin	Category 1
	Sensitization, respiratory	Category 1
	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 1
	Reproductive toxicity	Category 1
	Specific target organ toxicity, repeated exposure	Category 1 (respiratory)
Environmental hazards:	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

**Signal Word:** Danger

**Symbol:**



*Note: This product is generally not hazardous under normal conditions. But like any sealed container, battery may rupture when exposed to excessive heat and this could result in the release of hazardous materials. The information below is given to minimize any possible hazard during handling, storage and disposal.*

**Hazard Statements** (for contact with leakage from rupture):

- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H341: Suspected of causing genetic defects.
- H350: May cause cancer.
- H360: May damage fertility or the unborn child.
- H372: Causes damage to organs (respiratory) through prolonged or repeated exposure.
- H400: Very toxic to aquatic life.
- H410: Very toxic to aquatic life with long lasting effects.

**Precautionary Statements** (for contact with leakage from rupture):

- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P260: Do not breathe dust/fume.
- P264: Wash hands thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P272: Contaminated work clothing should not be allowed out of the workplace.
- P273: Avoid release to the environment.
- P280: Wear protective gloves.
- P281: Use personal protective equipment as required.
- P285: In case of inadequate ventilation wear respiratory protection.

**Response Precautionary Statements** (for contact with leakage from rupture):

- P302 + P352: IF ON SKIN: Wash with plenty of water.
- P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.
- P362: Take off contaminated clothing and wash before reuse.
- P304 + P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P342 + P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
- P308 + P313: IF exposed or concerned: Get medical advice/attention.
- P314: Get medical advice/attention if you feel unwell.
- P391: Collect spillage.

**Storage precautionary statements:**

- P405: Store locked up.

**Disposal precautionary statements:**

- P501: Dispose of contents/container according to relevant local and national regulations.

**3. Composition/information on ingredients**

**Product description:** substance ( ); preparation/mixture (√)

Ingredient (s)	CAS No.	EC No.	% by weight
Nickel hydroxide	12054-48-7	235-008-5	56.5%
Nickel (powder)	7440-02-0	231-111-4	13.58%

Copper	7440-50-8	231-159-6	10%
Cobalt oxide	1307-96-6	215-154-6	8.5%
Manganese	7439-96-5	231-105-1	4.5%
Cobalt	7440-48-4	231-158-0	4.2%
Aluminum	7429-90-5	231-072-3	1.5%
Iron	7439-89-6	231-096-4	1.2%
Magnesium	7439-95-4	231-104-6	0.02%

#### 4. First aid measures

**Persons using this product should consult a physician or other medical professional if an accident involving this product results in injury. Specific first-aid measures are as follows:** *(for contact with leakage from rupture)*

**Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a doctor/physician if you feel unwell.

**Skin Contact:** Take off contaminated clothes. Wash with soap and water. Wash contaminated clothes before reuse. If skin irritation or rash occurs: Get medical advice/attention.

**Eyes Contact:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If eye irritation persists: Get medical advice/attention.

**Ingestion:** Rinse mouth. Do not induce vomiting without professional instruction. Call a doctor/physician if you feel unwell.

**Acute effect and delayed effect:** Acute effect: Causes skin irritation. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Delayed effect: Suspected of causing genetic defects. May cause cancer. May damage fertility or the unborn child. Causes damage to organs (respiratory) through prolonged or repeated exposure.

**Personal protective equipment:** Wear protective gloves/protective clothing/eye protection/face protection when necessary.

**Indication of immediate medical attention and treatment needed, if necessary:** Treat according to symptoms and exposure dose.

#### 5. Fire-fighting measures

**Extinguishing Media:** Use water, dry chemical, dry sand for extinction.

**Unsuitable Extinguishing Media:** High volume water jet. Discharging cylinder shape water from fire hose may lead to spread fire to the surroundings.

**Special hazards arising from the chemical:** Cell may vent when subjected to excessive heat-exposing battery contents.

**Fire Fighting Method (This is for fire caused by other ignition sources):**

For initial fire, use water, dry chemical, dry sand, etc.

For large fire, it is effective to use fire foam, etc. to shut off air supply.

Remove containers from fire area if it can be done without risk.

Cool surrounding facilities, etc. with water spray.

Extinguish fire from upwind, and the fire extinguishing method should be appropriate to the situation in the surroundings.

**Special actions for fire-fighters:** Firefighters must wear self-contained breathing apparatus and full protective equipment.

Check whether the protective equipment is in good condition before use.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** Use proper personal protective equipment as indicated in Section 8.

**Environmental Precautions:** Isolate the spillage and keep proper distance from it. Keep the unrelated persons out of the contaminated area. The confined area should be ventilated adequately before entering it.

### Methods and material for containment and cleaning up:

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors.

## 7. Handling and storage

### Precautions for safe handling (for contact with leakage from rupture):

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/fume.

Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing should not be allowed out of the workplace.

Avoid release to the environment.

Wear protective gloves.

Use personal protective equipment as required.

In case of inadequate ventilation wear respiratory protection.

### Conditions for safe storage, including any incompatibilities:

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods. The storeroom should be equipped with proper facilities for accidental fire.

**Incompatible substances or mixtures:** No relevant information.

**Packing material:** This product is contained in craft lights.

## 8. Exposure controls/personal protection

### Occupational Exposure Limits: (for contact with leakage from rupture)

Ingredients	OSHA PEL-TWA	ACGIH TLV-TWA
Aluminum (CAS: 7429-90-5)	15 mg/m <sup>3</sup> (Total dust) 5 mg/m <sup>3</sup> (Respirable fraction)	1 mg/m <sup>3</sup> (Respirable fraction)
Copper (CAS: 7440-50-8)	1 mg/m <sup>3</sup> (Dusts and mists)	1 mg/m <sup>3</sup> (Dusts and mists)
Nickel (powder) (CAS: 7440-02-0)	Metal 0.5 mg/m <sup>3</sup> insoluble 0.1 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>

### Engineering Control:

Install washer eyes and safety showers near to the handling and storage area.

Shows the location of these facilities, with a clear and prominent warning board.

**Personal Protective Equipment (for workers):**

**Protection of Hands:**

Recommend wearing protective gloves for industrial hygienic purpose.



**Protection of Eyes:**

Not necessary under conditions of normal use. Wear safety glasses when working in a dusty environment or liquid may splash.



**Respiratory Protection:** Not necessary under conditions of normal use. Wear appropriate respirators when vapour or fume is generated from processing.



**Protection of Body:**

Recommend wearing general working clothing.



**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Avoid contact with eyes and broken skin.

## 9. Physical and chemical properties

General Information	
Form	Battery
Color	No data available
Odor	No data available
Odor threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	Not applicable

<b>Flash point</b>	Not applicable
<b>Evaporation rate</b>	Not applicable
<b>Flammability (solid, gas, etc.)</b>	Non-flammable
<b>Upper/lower flammability or explosive limits</b>	Not applicable
<b>Vapor pressure</b>	Not applicable
<b>Vapor density</b>	Not applicable
<b>Relative density</b>	No data available
<b>Solubility (ies)</b>	Not applicable
<b>Partition coefficient: n-octanol/Water</b>	No data available
<b>Auto-ignition temperature</b>	No data available
<b>Decomposition temperature</b>	No data available
<b>Viscosity</b>	Not applicable

## 10. Stability and reactivity

**Reactivity and Chemical stability:** This product is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Possibility of hazardous reactions:** If leaked, the electrolyte may react violently with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

**Conditions to Avoid:** Heating, mechanical abuse and electrical abuse.

**Incompatible materials:** If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

**Hazardous decomposition products:** It may release hazardous fume (e.g. Carbon monoxide, carbon dioxide, lithium oxide fumes) from thermal decomposition.

## 11. Toxicological information

**Product Toxicity Data**(for contact with leakage from rupture):

Ingredients (s)	CAS No.	LD <sub>50</sub> / LC <sub>50</sub> (Median lethal dose)
Nickel hydroxide	12054-48-7	Acute toxicity (Oral) LD <sub>50</sub> >200-<2,000 mg/kg (rat) Data source: ECHA Registered substances Acute toxicity(Dermal) LD <sub>50</sub> >2,000mg/kg (rabbit) Data source: ECHA Registered substances Acute toxicity(Inhalation): 1.2mg/L 4h (rat)
Aluminum	7429-90-5	Acute toxicity (Oral) LD <sub>50</sub> >10,000mg/kg (rat) Data source: ECHA Registered substances Acute toxicity(Dermal) LD <sub>50</sub> >2,000mg/kg (rabbit) Data source: ECHA Registered substances
Copper	7440-50-8	Acute toxicity (Oral) LD <sub>50</sub> >2,500mg/kg (rat) Data source: ECHA Registered substances Acute toxicity(Dermal) LD <sub>50</sub> >2,000mg/kg (rabbit) Data source: ECHA Registered substances

Nickel (powder)	7440-02-0	Acute toxicity (Oral) LD <sub>50</sub> >9,000mg/kg (rat) Data source: ECHA Registered substances Acute toxicity(inhalation) LC <sub>50</sub> > 10.2mg/L (rat) Data source: ECHA Registered substances
Classification of the whole product:		Not classified

**Skin corrosion/irritation** Nickel hydroxide (CAS: 12054-48-7): Category 2 (Data source: ECHA Registered substances, EU CLP)  
 Classification of the whole product: Category 2

**Serious eye damage/eye irritation** No classification for this product.

**Respiratory sensitizer** Nickel hydroxide (CAS: 12054-48-7): Category 1 (Data source: ECHA Registered substances, EU CLP)  
 Classification of the whole product: Category 1

**Skin sensitizer** Nickel hydroxide (CAS: 12054-48-7): Category 1 (Data source: ECHA Registered substances, EU CLP)  
 Nickel (CAS: 7440-02-0): Category 1 (Data source: ECHA Registered substances, EU CLP)  
 Classification of the whole product: Category 1

**Germ cell mutagenicity** Nickel hydroxide (CAS: 12054-48-7): Category 2 (Data source: ECHA Registered substances, EU CLP)  
 Classification of the whole product: Category 2

**Carcinogenicity** Nickel hydroxide (CAS: 12054-48-7): Category 1 (Data source: ECHA Registered substances, EU CLP)  
 Nickel (CAS: 7440-02-0): Category 1 (Data source: ECHA Registered substances, EU CLP)  
 Classification of the whole product: Category 1

**Reproductive Toxicity** Nickel hydroxide (CAS: 12054-48-7): Category 1 (Data source: ECHA Registered substances, EU CLP)  
 Classification of the whole product: Category 1

**Specific target organ toxicity, single exposure** No classification for this product.

**Specific target organ toxicity, repeated exposure** Nickel hydroxide (CAS: 12054-48-7): Category 1 (Data source: ECHA Registered substances, EU CLP)  
 Nickel (CAS: 7440-02-0): Category 1 (respiratory) (Data source: ECHA Registered substances, EU CLP)  
 Classification of the whole product: Category 1 (respiratory)

**Aspiration hazard** No classification for this product.

**Effects on or via lactation:** No classification for this product.

**Aspiration hazard:** No classification for this product.

## 12. Ecological information

**Ecotoxicity** (*for contact with leakage from rupture*): As for the whole product, there is no relevant data. The data shown below is of the ingredient.

Aluminum (CAS: 7429-90-5):

48h-LC<sub>50</sub>: 11.5mg/L, fish

Data source: ECHA Registered substances

Copper (CAS: 7440-50-8):

96h-LC<sub>50</sub>: 0.460mg/L, fish

Nickel hydroxide (CAS: 12054-48-7):

96h-LC<sub>50</sub>: 8mg/L, fish

48h-LC<sub>50</sub>: 1.9mg/L, aquatic invertebrates

7d-EC<sub>10</sub>: 0.078 - 0.12 mg/L, algae (*lemna gibba*)

Aquatic Acute 1

Aquatic Chronic 1

Data source: ECHA Registered substances

Classification of the whole product: Aquatic Acute 1

Aquatic Chronic 1

**Persistence and Degradability:** No data available.

**Bioaccumulative Potential:** No information available.

**Mobility in Soil:** No information available.

**Other adverse effects:** No relevant information.

## 13. Disposal considerations

**Waste treatment methods:**

Minimize the hazard of waste by the methods of neutralization and stabilization.

Any disposal practice must be in compliance with country, local, state, and federal laws and regulations.

After contents are completely removed, dispose of its container at hazardous or special waste collection point.

Paste a label on the container indicating the possible hazards of the waste.

## 14. Transport Information

**DOT/Air-Transportation- IATA/ICAO/Sea-Transportation-IMO/IMDG:**

**.Proper Shipping Name:** Not regulated.

**.Hazard Class:** Not classified.

**.UN Code:** Not regulated.

**.Packing Group:** Not classified.

**.Packing Group Symbol:** Not classified.

**.Marine Pollutant (Yes/No):** No

**.EMS NO.:** Not regulated.

**Special precautions for user:**

Check whether the package is completed or sealed before transporting; make sure no damage of packages and prevent goods



from falling down during transporting; the transport vehicle should be equipped with facilities for fire-fighting and accidental release handling; do NOT transport this product together with incompatible substances; stay away from fire and areas of high temperature during stopovers.

## 15. Regulatory information

### United States:

**Section 355 (extremely hazardous substances):** Not listed.

**SARA 313:** Aluminum (CAS: 7429-90-5) (fume or dust), Copper (CAS: 7440-50-8) and Nickel (CAS: 7440-02-0) are listed in SARA 313 Toxic Release Chemicals.

**Toxic Substances Control Act (TSCA):** All ingredients are listed in the U.S. Toxic Substances Control Act Chemical Substance Inventory List.

### **Clean Water Act:**

Chemical Name	Reportable Quantities	Hazardous Substances	Priority Pollutants	Toxic Pollutants
Nickel hydroxide (CAS: 12054-48-7)	4.54 Kg	Listed	Listed	Listed
Nickel (CAS: 7440-02-0)	Not applicable	Not applicable	Listed	Listed
Copper (CAS: 7440-50-8)	Not applicable	Not applicable	Listed	Listed

### **Carcinogenicity categories:**

Nickel (CAS: 7440-02-0): IARC-2B, NTP-1, CP65.

Nickel hydroxide (CAS: 12054-48-7): ACGIH-A1, IARC-1, NTP-1, CP65

### **Other relevant laws and regulations:**

**Canada Domestic Substances List (DSL):** All ingredients are listed in the Canada DSL.

**Canada Non-domestic Substance List (NDSL):** Not listed.

**Candidate List of Substances of very high concern (SVHC) according to ECHA:** Not listed.

**REACH Regulation Annex XVII Regulation List:** Not listed.

**REACH Regulation Annex XIV Authorization List:** Not listed.

**Germany – WGK:** WGK-3.

### **(EC) 1272/2008 Annex VI Table 3.1:**

Ingredient (s)	CAS No.	EC No. 1272/2008 Classification	
		CLASS. CODE	HAZARD CODE
Nickel	7440-02-0	Carc. 2 STOT RE 1 Skin Sens. 1	H351 H372 ** H317
Nickel hydroxide	12054-48-7	Carc. 1A Muta. 2 Repr. 1B Acute Tox. 4 * Acute Tox. 4 * STOT RE 1 Skin Irrit. 2	H350i H341 H360D *** H332 H302 H372 ** H315

		Resp. Sens. 1 Skin Sens. 1 Aquatic Acute 1 Aquatic Chronic 1	H334 H317 H400 H410
Cobalt oxide	1307-96-6	Acute Tox. 4 * Skin Sens. 1 Aquatic Acute 1 Aquatic Chronic 1	H302 H317 H400 H410
Cobalt	7440-48-4	Resp. Sens. 1 Skin Sens. 1 Aquatic Chronic 4	H334 H317 H413

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

## 16. Other information

**DISCLAIMER:** Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

### References:

GHS Annex II  
 GHS SDS Instruction  
 ANSI Z400.1/Z129.1-2010  
 OSHA Hazard Communication Standard (HCS) 2012

### Full description of some acronyms:

**CAS-Chemical Abstracts Service**  
**EINECS-European Inventory of Existing Commercial Chemical Substances**  
**IMO-International Maritime Organization**  
**IMDG-International Maritime Dangerous Goods**  
**IATA-International Air Transport Association**  
**ICAO-International Civil Aviation Organization**  
**TSCA-Toxic Substance Control Act**  
**OSHA-Occupational Safety and Health Administration**  
**ACGIH- American Conference of Governmental Industrial Hygienists**

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