

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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Information in case of emergency: Tel.: +86-0373-5412588

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 ³ (Total dust) 5 mg/m ³ (Respirable fraction) | 1 mg/m ³ (Respirable fraction) |
| Copper (CAS: 7440-50-8) | 1 mg/m ³ (Dusts and mists) | 1 mg/m ³ (Dusts and mists) |
| Nickel (powder) (CAS: 7440-02-0) | Metal 0.5 mg/m ³ insoluble 0.1 mg/m ³ | 1.5 mg/m ³ |

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 |

| | |
|---|-------------------|
| Flash point | Not applicable |
| Evaporation rate | Not applicable |
| Flammability (solid, gas, etc.) | Non-flammable |
| Upper/lower flammability or explosive limits | Not applicable |
| Vapor pressure | Not applicable |
| Vapor density | Not applicable |
| Relative density | No data available |
| Solubility (ies) | Not applicable |
| Partition coefficient: n-octanol/Water | No data available |
| Auto-ignition temperature | No data available |
| Decomposition temperature | No data available |
| Viscosity | 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 ₅₀ / LC ₅₀ (Median lethal dose) |
|------------------|------------|--|
| Nickel hydroxide | 12054-48-7 | Acute toxicity (Oral) LD ₅₀ >200-<2,000 mg/kg (rat) Data source: ECHA Registered substances Acute toxicity(Dermal) LD ₅₀ >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 ₅₀ >10,000mg/kg (rat) Data source: ECHA Registered substances Acute toxicity(Dermal) LD ₅₀ >2,000mg/kg (rabbit) Data source: ECHA Registered substances |
| Copper | 7440-50-8 | Acute toxicity (Oral) LD ₅₀ >2,500mg/kg (rat) Data source: ECHA Registered substances Acute toxicity(Dermal) LD ₅₀ >2,000mg/kg (rabbit) Data source: ECHA Registered substances |

| | | |
|--------------------------------------|-----------|--|
| Nickel (powder) | 7440-02-0 | Acute toxicity (Oral) LD ₅₀ >9,000mg/kg (rat) Data source: ECHA Registered substances Acute toxicity(inhalation) LC ₅₀ > 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-LC₅₀: 11.5mg/L, fish

Data source: ECHA Registered substances

Copper (CAS: 7440-50-8):

96h-LC₅₀: 0.460mg/L, fish

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

96h-LC₅₀: 8mg/L, fish

48h-LC₅₀: 1.9mg/L, aquatic invertebrates

7d-EC₁₀: 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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