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: 1.2v AA 100mah NI-CD BATTERY

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 Xingtai New Energy Co., Ltd.
Address: Xiaokuai Village, Dakuai Town, Fengquan District, Xinxiang, Henan., CHINA
Zip Code: 453011
Tel.: +86-373-5788803
Fax: +86-373-5413292

Further information obtainable from: Xinxiang Xingtai New Energy Co., Ltd.

Information in case of emergency: +86-373-5788803

2. Hazards identification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200):

Physical hazards:	Not classified	
Health hazards:	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Sensitisation, skin	Category 1
	Sensitisation, respiratory	Category 1
	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 1
	Reproductive toxicity	Category 1
	Specific target organ toxicity, repeated exposure	Category 1 (kidney, lung, bone)
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. It contains heavy metals which many contaminate environment.

Hazard Statements:

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
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 (kidney, lung, bone) through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

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/eye protection/face protection.
P281: Use personal protective equipment as required.
P285: In case of inadequate ventilation wear respiratory protection.

Response Precautionary Statements:

P302 + P352: IF ON SKIN: Wash with plenty of water.
P332 + P313: If skin irritation occurs: Get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor/physician.
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
Steel	12597-69-2	--	36.50%

Cadmium hydroxide	21041-95-2	244-168-5	18.70%
Nickel hydroxide	12054-48-7	235-008-5	18.10%
Water	7732-18-5	231-791-2	8.30%
Cadmium	7440-43-9	231-152-8	8.20%
Nylon 66	32131-17-2	608-706-6	6.20%
Potassium hydroxide	1310-58-3	215-181-3	3.00%
Nickel	7440-02-0	231-111-4	1.00%

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: Immediately take off contaminated clothes. Wash with soap and water. Wash contaminated clothes before reuse. If irritation occurs, get medical attention.

Eyes Contact: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper andlower eyelids. Immediately call a POISON CENTER or doctor/physician.

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

Acute effect and delayed effect:

Acute effect: Causes skin irritation. Causes serious eye damage. 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 (kidney, lung, bone) 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 dry chemical, CO_2 for extinction. Do not use direct water stream. Discharging cylinder shape water from fire hose may lead to spread fire to the surroundings.

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

Special Fire Fighting Procedures: Structural firefighters must wear self-contained breathing apparatus and full protective equipment.

Unusual Fire and Explosion Hazards: Cellmay vent when subjected to excessive heat-exposing batterycontents.

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

Fire-fighters must wear self-contained breathing apparatus and full protective equipment (e.g. fire-retardant clothing).

For initial fire, use dry powder, carbon dioxide, etc.

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

Deny unnecessary entry to the place around the fire.

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.

6. Accidental release measures

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

Environmental Precautions: Keep cleaning run-offs out of municipal sewers and open bodies of water. Comply with local and national laws and regulations.

Methods and material for containment and cleaning up:

If the batterymaterial is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, anddispose of it in a plastic bag and put into a steel can. The preferred response is to leavethe area and allow the batteryto cool and vapors to dissipate. Provide maximumventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid withabsorbent and incinerate.

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/eye protection/face protection.
Use personal protective equipment as required.
In case of inadequate ventilation wear respiratory protection.

Conditions for safe storage, including any incompatibilities:

NOTE: STAY AWAY FROM SOURCES OF HEAT.

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 beavoided. Do not place the batterynear heating equipment, nor expose to direct sunlight forlong periods.

Incompatible substances or mixtures: No relevant information.

Packing material: Contained in the equipment.

8. Exposure controls/personal protection

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

Ingredients	OSHA PEL-TWA	ACGIH TLV-TWA
Cadmium (CAS: 7440-43-9)	No data available	0.01 mg/m^3 (total) 0.002 mg/m^3 (resp.)

Nickel (CAS: 7440-02-0)	Metal 0.5 mg/m^3 insoluble 0.1 mg/m^3	1.5 mg/m^3

Engineering Control *(for contact with leakage from rupture)***:**

Use this product only in closed systems fully or with local exhaust ventilation.

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:

Not necessary under conditions of normal use.

Recommend wearing protective gloves for industrial hygienic purpose *(for contact with leakage from rupture)*.

Protection of Eyes:

Not necessary under conditions of normal use.

Wear safety glasses when working in a dusty environment *(for contact with leakage from rupture)*.

Respiratory Protection:

Not necessary under conditions of normal use.

Wear appropriate respirators when vapour or fume is generated from processing *(for contact with leakage from rupture)*.

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	Solid (Button shape)
Color	Green
Odor	Odorless
Odor threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas, etc.)	Non-flammable
Upper/lower flammability or explosive limits	Not applicable
Vapor pressure	Not applicable
Vapor density	No data available
Relative density	No data available
Solubility (ies)	No data available
Partition coefficient: n-octanol/Water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

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 oxides, zinc oxide) from thermal decomposition.

11. Toxicological information

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

Ingredients	CAS No.	Acute toxicity LD_{50}/LC_{50} (Median lethal dose)
Cadmium hydroxide	21041-95-2	Acute toxicity (Oral) LD_{50} ＞63-＜259 mg/kg (rat) Data source: ECHA Acute toxicity (Inhalation): 28.4mg/m^3 4h (rat) Data source: ECHA
Nickel hydroxide	12054-48-7	Acute toxicity (Oral) LD_{50}＞200-＜2,000 mg/kg (rat) Data source: ECHA Acute toxicity (Dermal) LD_{50}＞2,000mg/kg (rabbit)

		Data source: ECHA Acute toxicity (Inhalation): 1.2mg/L 4h (rat) Data source: ECHA
Cadmium	7440-43-9	Acute toxicity (Oral) LD_{50}: 2,330mg/kg (rat) Data source: ChemIDplus
Potassium hydroxide	1310-58-3	Acute toxicity (Oral) LD_{50}: 273 mg/kg (rat) Data source: ChemIDplus
Nickel	7440-02-0	Acute toxicity (Oral) LD_{50}＞9,000mg/kg (rat) Data source: ECHA Acute toxicity(inhalation) LC_{50}＞10.2mg/L (rat) Data source: ECHA
Classification of the whole product		Not classified.

Skin corrosion/irritation:
Nickel hydroxide (CAS: 12054-48-7): Category 2 (Data source: ECHA)
Potassium hydroxide (CAS: 1310-58-3): Category 1 (Data source: ECHA)
Classification of the whole product: Category 2

Serious eye damage/eye irritation:
Potassium hydroxide (CAS: 1310-58-3): Category 1 (Data source: ECHA)
Classification of the whole product: Category 1

Respiratory sensitizer:
Cadmium hydroxide (CAS: 21041-95-2): Category 2 (Data source: ECHA)
Nickel hydroxide (CAS: 12054-48-7): Category 1 (Data source: ECHA)
Cadmium (CAS: 7440-43-9): Category 2 (Data source: ECHA)
Nickel (CAS: 7440-02-0): Category 1 (Data source: ECHA)
Classification of the whole product: Category 1

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

Germ cell mutagenicity:
Cadmium hydroxide (CAS: 21041-95-2): Category 2 (Data source: ECHA)
Nickel hydroxide (CAS: 12054-48-7): Category 2 (Data source: ECHA)
Cadmium (CAS: 7440-43-9): Category 2 (Data source: ECHA)
Classification of the whole product: Category 2

Carcinogenicity:
Cadmium hydroxide (CAS: 21041-95-2): Category 1 (Data source: ECHA)
Nickel hydroxide (CAS: 12054-48-7): Category 1 (Data source: ECHA)
Cadmium (CAS: 7440-43-9): Category 1 (Data source: ECHA)
Nickel (CAS: 7440-02-0): Category 1 (Data source: ECHA)
Classification of the whole product: Category 1

Reproductive Toxicity:
Cadmium hydroxide (CAS: 21041-95-2): Category 2 (Data source: ECHA)
Nickel hydroxide (CAS: 12054-48-7): Category 1 (Data source: ECHA)
Classification of the whole product: Category 1

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

Specific target organ toxicity, repeated exposure:
Cadmium hydroxide (CAS: 21041-95-2): Category 1 (kidney, lung, bone) (Data source: ECHA)
Nickel hydroxide (CAS: 12054-48-7): Category 1 (Lung) (Data source: ECHA)
Cadmium (CAS: 7440-43-9): Category 1 (kidney, lung, bone) (Data source:

	ECHA) Nickel (CAS: 7440-02-0): Category 1 (Lung) (Data source: ECHA) Classification of the whole product: Category 1 (kidney, lung, bone)
Aspiration hazard:	No classification for this product.

12. Ecological information

Ecotoxicity: As for the whole product, there is no relevant data. The data shown below is of each ingredient.

Cadmium hydroxide (CAS: 21041-95-2):

4d-LC_{50}: 1500 μg/L, fish

Aquatic Acute 1

Aquatic Chronic 1

Data source: ECHA

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

96h-LC_{50}: 8mg/L, fish

48h-LC_{50}: 1.9mg/L, aquatic invertebrates

7d-EC_{10}: 0.078 - 0.12 mg/L, algae (lemna gibba)

Aquatic Acute 1

Aquatic Chronic 1

Data source: ECHA

Cadmium (CAS: 7440-43-9):

4d-LC_{50}: 1500 μg/L, fish

Aquatic Acute 1

Aquatic Chronic 1

Data source: ECHA

Classification of the whole product: Hazardous to the aquatic environment, acute hazard- Category 1
Hazardous to the aquatic environment, long-term hazard- Category 1

Persistence and Degradability: No data available.

Bioaccumulative Potential: No information available.

Mobility in Soil: No information available.

Other adverse effects: No information available.

General Notes:

Do not throw used product into ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

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.:

NOTE: STAY AWAY FROM SOURCES OF HEAT

UN proper shipping name: Not regulated.
Transport hazard class(es): Not classified.
UN number: Not regulated.
Packing Group: Not classified.
Packing Group Symbol: Not classified.
Marine Pollutant (Yes/No): No
EMS NO.: Not regulated.
Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable

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: Cadmium (CAS: 7440-43-9) and nickel (CAS: 7440-02-0) are listed in SARA 313 Toxic Release Chemicals.
Clean Water Act:

Chemical Name	CWA - Reportable Quantities	CWA - Hazardous Substances	CWA - Priority Pollutants	CWA - Toxic Pollutants
Nickel hydroxide (CAS: 12054-48-7)	4.54 Kg	Listed	Listed	Listed
Cadmium (CAS: 7440-43-9)	45.4	Listed	Listed	Listed
Potassium hydroxide (CAS: 1310-58-3)	454 Kg	Listed	Not listed	Not listed
Nickel (CAS: 7440-02-0) ††	45.4 Kg	Listed	Listed	Listed

†† No reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers (0.004 inches).

Toxic Substances Control Act (TSCA): Except nckel plated steeel (CAS: 12597-69-2), the other ingredients are listed in the TSCA inventory list.

Carcinogenicity categories:
Nickel hydroxide (CAS: 12054-48-7): ACGIH-A1, IARC-1, NTP-1, CP65
Cadmium (CAS: 7440-43-9): ACGIH-A2, IARC-1, NTP-1, CP65
Nickel (CAS: 7440-02-0): IARC-2B, NTP-1, CP65.

Other relevant laws and regulations:
Canada Domestic Substances List (DSL): Except nckel plated steeel (CAS: 12597-69-2), the other ingredients are listed in

the DSL list.

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

Candidate List of Substances of very high concern (SVHC) according to ECHA: Cadmium (CAS: 7440-43-9)

REACH Regulation Annex XVII Regulation List: Cadmium (CAS: 7440-43-9), Nickel (CAS: 7440-02-0)

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 hydroxide	12054-48-7	Carc. 1A Muta. 2 Repr. 1B Acute Tox. 4 * Acute Tox. 4 * STOT RE 1 Skin Irrit. 2 Resp. Sens. 1 Skin Sens. 1 Aquatic Acute 1 Aquatic Chronic 1	H350i H341 H360D *** H332 H302 H372 ** H315 H334 H317 H400 H410
Cadmium	7440-43-9	Carc. 1B Muta. 2 Repr. 2 Acute Tox. 2 * STOT RE 1 Aquatic Acute 1 Aquatic Chronic 1	H350 H341 H361fd H330 H372 ** H400 H410
Potassium hydroxide	1310-58-3	Acute Tox. 4 * Skin Corr. 1A	H302 H314
Nickel	7440-02-0	Carc. 2 STOT RE 1 Skin Sens. 1	H351 H372 ** H317

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

16. Other information

DISCLAIMER:

All the information of this SDS is true and effective, and only for reference. Our company will not control the way how people use it, neither will we be responsible for any consequence. The users shall decide how to properly use the product or adopt certain production way for some special purpose. The above-mentioned precautionary measures are helpful to avoid damage to the property or life safety during the operation or use of this product.

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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**********The End**********