

Safety Data Sheet

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-CD RECHARGEABLE BATTERY

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

Manufacturer/Supplier: ZHONGYUE BATTERY CO.,LTD.

Address: Zhong ma fang Village, Muye District, Xinxiang City, He'nan Province, China.

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Further information obtainable from: ZHONGYUE BATTERY CO.,LTD.

Information in case of emergency: Tel.: 86-0373-2688644

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: not classified.

Environmental hazards: not classified.

Signal Word: Not applicable.

Symbol: Not applicable.

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 flammable and irritating materials which may cause irritation to respiratory tract, skin and eyes.

Hazard Statements:

No relevant classification for this product.

Precautionary Statements:

No special requirements.

Response Precautionary Statements:

No special requirements.

Storage precautionary statements:

No special requirements.

Disposal precautionary statements:

No special requirements.

3. Composition/information on ingredients

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

Ingredient (s)	CAS No.	EC No.	% by weight
Cadmium hydroxide	21041-95-2	244-168-5	26.4%
Iron oxide	1345-25-1	215-721-8	25.2%
Water	7732-18-5	231-791-2	18.3%
Nickel dihydroxide	12054-48-7	235-008-5	16.7%
Potassium hydroxide	1310-58-3	215-181-3	8.0%
Sodium hydroxide	1310-73-2	215-185-5	2.8%
Graphite	7782-42-5	231-955-3	2.6%

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. Immediately call a POISON CENTER or doctor/physician if you feel unwell.

Skin Contact: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If irritation persists, get medical attention.

Eyes Contact: 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.

Ingestion: Rinse mouth. Do not induce vomiting without professional instruction. Get medical attention immediately if discomfort occurs.

Acute effect and delayed effect: Acute effect: No acute effect under normal conditions. If contact with electrolyte, it can cause irritation to skin and eyes. Delayed effect: Not found.

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: Fire foam, carbon dioxide or dry chemical powder.

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

Special hazards arising from the chemical: If involved in a fire, these products may ignite or decompose. Products of thermal decomposition may include hazardous and irritating gases (e.g. carbon oxides, dipotassium oxide, fumes of cadmium and nickel).

Fire Fighting Method:

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.
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: 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:

Small Spill:

If this battery ruptures, do not touch the battery directly.
Wear protective gloves and sweep up leakage carefully.
Label the waste containers and dispose it in a proper way.

7. Handling and storage

Precautions for safe handling:

Do not breathe vapors or fumes that may be evolved during processing.
Do not disassemble or burn batteries.
Do not squeeze or pierce batteries.
Do not put batteries into water.
Workers must wear proper protective equipment and must operate strictly according to relative rules.

Conditions for safe storage, including any incompatibilities:

Do not store near flame or incompatible materials.
Keep battery terminals insulated when in storage or transportation. The temperature in the storeroom must be controlled in a proper range.
Avoid long-time direct contact of sunlight.

Incompatible substances or mixtures: Strong oxidizing agents, strong acids, strong bases, reducers and halogens.

Packing material: Blister card.

8. Exposure controls/personal protection

Occupational Exposure Limits:

Ingredients	OSHA PEL-TWA	ACGIH TLV-TWA
Sodium hydroxide (CAS: 1310-73-2)	2mg/m ³	2mg/m ³
Graphite (CAS: 7782-42-5)	15mppcf	2mg/m ³

Engineering Controls:

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:

Recommend wearing protective gloves for industrial hygienic purpose.



Protection of Eyes:

No special requirements under normal conditions. Wear safety glasses when working in a dusty environment.



Respiratory Protection: No special requirements under normal conditions. Wear appropriate respirators when vapour or fume is generated from processing.



Protection of Body:

Recommend wearing working clothing made of anti-corrosion materials.



.General protective and hygienic measures:

Wash hands before breaks and at the end of work.

Do not inhale vapour generated from processing.

Avoid contact with eyes and skin.

9. Physical and chemical properties

General Information	
Form	Solid
Colour	No data available
Odour	No data available
pH Value	No data available
Boiling range	No data available
Melting point/Melting range	No data available
Flash Point	No data available
Flammable/Explosive Limits-Lower Vol %	Not applicable
Flammable/Explosive Limits-Upper Vol %	Not applicable
Relative density	No data available
Relative vapour density	No data available
Vapour pressure	No data available
Solubility	No data available
n-octanol/Water partition coefficient	No data available
Igniting temperature	No data available
Decomposition temperature	No data available
Odour threshold value	No data available
Viscosity	No data available
Evaporation rate	No data available
Flammability (solid, gas, etc.)	This product is not classified as flammable solid.

10. Stability and reactivity

Reactivity and Chemical stability: Stable under normal temperatures and pressures.

Possibility of hazardous reactions: The electrolyte may react violently with strong oxidizing agents, strong acids, strong bases, reducers and halogens.

Conditions to Avoid: Avoid exposure or contact to extreme temperatures and combustible materials.

Incompatible materials: Strong oxidizing agents, strong acids, strong bases, reducers and halogens.

Hazardous decomposition products: Products of thermal decomposition can include produce hazardous and irritating gases and fumes (e.g. carbon oxides, dipotassium oxide, fumes of cadmium and nickel).

11. Toxicological information

Product Toxicity Data: The toxicity data of this product has not been determined by testing or research, the toxicity data shown below is for reference only.

Ingredient (s)	CAS number	LD ₅₀ /LC ₅₀ (Median lethal dose)
Cadmium hydroxide	21041-95-2	Acute toxicity (Oral) LD ₅₀ : 890mg/kg (rat) Data source: ECHA
Iron oxide	1345-25-1	Acute toxicity (Oral) LD ₅₀ >10,000mg/kg (rat)

		Data source: ECHA
Nickel dihydroxide	12054-48-7	Acute toxicity (dermal) LD ₅₀ >2,000mg/kg (rat) Data source: ECHA
Patassium hydroxide	1310-58-3	Acute toxicity (Oral) LD ₅₀ : 333mg/kg (rat) Data source: ECHA
Sodium hydroxide	1310-73-2	Acute toxicity (Oral) LD ₅₀ : 325mg/kg (rat) Data source: SIDS, 2002
Graphite	7782-42-5	Acute toxicity (Oral) LD ₅₀ >2,000mg/kg (rat) Data source: SIDS, 2002

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

Skin corrosion/irritation: No classification for this product.

Respiratory /Skin sensitizer: No classification for this product.

Germ cell mutagenicity: No classification for this product.

Carcinogenicity: No classification for this product.

Reproductive Toxicity: No classification for this product.

STOT-single exposure: No classification for this product.

STOT-repeated exposure: No classification for this product.

Aspiration hazard: No classification for this product.

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

12. Ecological information

Ecotoxicity: No data available for the whole product. The data shown below is of the main ingredient.

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

96h-LC₅₀: 6.470mg/L Fish

Data source: ECHA

Iron oxide (CAS: 1345-25-1):

48h-EC₅₀>100mg/L invertebrates

Data source: ECHA

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

96h-LC₅₀: 2.916-17.678mg/L Fish

Data source: ECHA

Patassium hydroxide (CAS: 1310-58-3):

24h-LC₅₀: 165 mg/L Fish

Sodium hydroxide (CAS: 1310-73-2):

48h-EC₅₀: 40mg/L Crustaceans

Data source: SIDS, 2002

Graphite (CAS: 7782-42-5):

96h-LC₅₀>100mg/L Fish

Data source: ECHA

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: As for the sealed batteries, it can hardly move in soil. The electrolyte can move in soil due to its liquid nature.

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 applicable.

UN Code: Not applicable.

Packing Group: Not applicable.

Packing Group Symbol: Not applicable.

Marine Pollutant (Yes/No):No.

EMS NO.: Not applicable.

It is not listed as dangerous goods by 57th edition-IATA DGR of International Air Transport Association (IATA), the International Civil Aviation Organization (ICAO) and U.S Department of Transportation (DOT) regulations, 49 CFR. These batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in Special Provision A123 in the ICAO Technical Instructions and IATA Dangerous Goods Regulations and Special Provision 130 of the DOT.

These regulations require these batteries to be packed in such a way to prevent short circuits or generation of a dangerous quantity of heat.

In addition, the ICAO and IATA regulations require the words “Not Restricted” and “Special Provision A123” to be provided on the air waybill.

International Maritime Organization (IMO) does not regulate these batteries.

NOTE: STAY AWAY FROM SOURCES OF HEAT

15. Regulatory information

.United States:

Section 355 (extremely hazardous substances): Not listed.

SARA 313: Not listed.

Clean Water Act:

Nickel dihydroxide (CAS: 12054-48-7), Potassium hydroxide (CAS: 1310-58-3), Sodium hydroxide (CAS: 1310-73-2) are listed as Hazardous Substances under the CWA.

Nickel dihydroxide (CAS: 12054-48-7) is listed as Toxic Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

Carcinogenicity categories:

Cadmium hydroxide (CAS: 21041-95-2): ACGIH-A2, IARC-1, NTP-1, CP65.

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

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

.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: Cadmium hydroxide (CAS: 21041-95-2) is listed in REACH Regulation Annex XVII Regulation List.

REACH Regulation Annex XIV Authorization List: Not listed.

Germany – WGK: Not classified.

(EC) 1272/2008 Annex VI Table 3.1:

Ingredient(s)	EC No. 1272/2008 Classification	
	CLASS. CODE	HAZARD CODE
Nickel dihydroxide (CAS: 12054-48-7)	Carc. 1A	H350i
	Muta. 2	H341
	Repr. 1B	H360D ***
	Acute Tox. 4*	H332
	Acute Tox. 4*	H302
	STOT RE 1	H372 **
	Skin Irrit. 2	H315
	Resp. Sens. 1	H334
	Skin Sens. 1	H317
	Aquatic Acute 1	H400
Aquatic Chronic 1	H410	
Potassium hydroxide (CAS: 1310-58-3)	Acute Tox. 4*	H302
	Skin Corr. 1A	H314
Sodium hydroxide (CAS: 1310-73-2)	Skin Corr. 1A	H314

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