

SAFETY DATA SHEET

Regulation (EC) No 1907/2006 (REACH), Annex II
(COMMISSION REGULATION (EU) No 453/2010)

Version 1

Product Name Nickel Metal Hydride Battery

Issue Date 08-Jun-2015

Revision date 13-Jul-2015

SECTION 1: Identification of the substance /mixture and of the company/undertaking

1.1. Product identifier

Product Name Nickel Metal Hydride Battery
REACH registration number No information available

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Use to supply electrical powder
Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Supplier Jiangmen JJJ Battery Co., Ltd.
Address No.83 Yongsheng Road, Baisha Ind. Dev. Area West, Jiangmen city, Guangdong province, China
Postal Code 529000
Phone +86-750-3534405
FAX +86-750-3534305
E-mail lsp@jjjbattery.com

1.4. Emergency telephone number

+86-750-3534405

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

This product is not classified as hazardous.

2.2. Label elements

Symbols/Pictograms None
Signal word None
Hazard Statements Not applicable
Precautionary Statements Not applicable

2.3. Other hazards

No information available

SECTION 3: Composition/information on ingredients

3.1. Mixture

Chemical Name	EC No	CAS No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hydrogen storage alloy	N/A	N/A	34.4	Not classified.
Iron	231-096-4	7439-89-6	26.6	Not classified

Nickel hydroxide	235-008-5	12054-48-7	22.7	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) Muta. 2 (H341) Carc. 1A (H350i) Repr. 1B (H360D) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Nickel	231-111-4	7440-02-0	5.5	Carc. 2; H351 STOT RE 1; H372 Skin Sens. 1; H317 Aquatic Chronic 3; H412
Potassium hydroxide	215-181-3	1310-58-3	4.4	Acute Tox. 4 (H302) Skin Corr. 1A (H314)
Polypropylene	-	9003-07-0	3.4	Not classified
Cobalt(II) oxide	215-154-6	1307-96-6	1.8	Acute Tox. 4 (H302) Skin Sens. 1 (H317) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Nickel powder	231-111-4	7440-02-0	0.8	Carc. 2; H351 STOT RE 1; H372 Skin Sens. 1; H317 Aquatic Chronic 3; H412
Lithium hydroxide	215-183-4	1310-65-2	0.4	Acute Tox. 4 Skin Corr. 1B

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice

Remove contaminated clothing and shoes. If symptoms persist, call a physician.

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. If skin irritation persists, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth Get medical attention Never give anything by mouth to an unconscious person

4.2. Most important symptoms and effects, both acute and delayed

No information available

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating and toxic gases and vapors

5.3. Advice for firefighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate personnel to safe areas
 Ensure adequate ventilation, especially in confined areas
 Remove all sources of ignition
 Avoid contact with skin, eyes and inhalation of vapors
 Use personal protection recommended in Section 8

6.2. Environmental precautions

Local authorities should be advised if significant spillages cannot be contained
 Prevent entry into waterways, sewers, basements or confined areas

6.3. Methods and material for containment and cleaning up

Place in container for disposal according to local / national regulations (see Section 13)

6.4. Reference to other sections

See Section 7 for more information
 See section 8 for more information
 See section 13 for more information

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice
 Ensure adequate ventilation, especially in confined areas
 Avoid contact with skin, eyes or clothing
 Wash contaminated clothing before reuse
 Take precautionary measures against static discharges
 Do not breathe dust/fume/gas/mist/vapors/spray
 Do not eat, drink or smoke when using this product
 Wash thoroughly after handling
 Use personal protection recommended in Section 8

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place
 Keep away from heat
 Keep locked up and out of reach of children
 Store in accordance with local regulations

7.3. Specific end use(s)

Apart from the uses mentioned in SECTION 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters**

Chemical Name	Australia	Austria	Belgium	Denmark	European Union
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Nickel hydroxide (CAS #: 12054-48-7)	-	-	-	TWA: 0.05 mg/m ³	-
Nickel (CAS #: 7440-02-0)	1 mg/m ³	-	-	TWA: 0.05 mg/m ³	-
Potassium hydroxide (CAS #: 1310-58-3)	2 mg/m ³ Peak	TWA: 2 mg/m ³	-	Ceiling: 2 mg/m ³	-
Cobalt(II) oxide (CAS #: 1307-96-6)	-	Skin	-	TWA: 0.01 mg/m ³	-

Chemical Name	Latvia	France	Finland	Germany	Italy
Nickel hydroxide (CAS #: 12054-48-7)	TWA: 0.05 mg/m ³	TWA: 1 mg/m ³	TWA: 0.1 mg/m ³	Skin	-
Nickel (CAS #: 7440-02-0)	TWA: 0.05 mg/m ³	TWA: 1 mg/m ³	TWA: 1 mg/m ³ TWA: 0.1 mg/m ³	Skin	-
Potassium hydroxide (CAS #: 1310-58-3)	-	STEL: 2 mg/m ³	STEL: 2 mg/m ³ Ceiling: 2 mg/m ³	-	-
Polypropylene (CAS #: 9003-07-0)	TWA: 5 mg/m ³	-	-	-	-
Cobalt(II) oxide (CAS #: 1307-96-6)	TWA: 0.5 mg/m ³	-	TWA: 0.02 mg/m ³	Skin	-

Chemical Name	Poland	Portugal	Spain	Switzerland	Netherlands
Nickel hydroxide (CAS #: 12054-48-7)	TWA: 0.25 mg/m ³	TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³	TWA: 0.05 mg/m ³	-
Nickel (CAS #: 7440-02-0)	TWA: 0.25 mg/m ³	TWA: 1.5 mg/m ³	TWA: 1 mg/m ³	TWA: 0.5 mg/m ³	-
Potassium hydroxide (CAS #: 1310-58-3)	STEL: 1 mg/m ³ TWA: 0.5 mg/m ³	Ceiling: 2 mg/m ³	STEL: 2 mg/m ³	TWA: 2 mg/m ³	-
Cobalt(II) oxide (CAS #: 1307-96-6)	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	Skin TWA: 0.05 mg/m ³	-

Chemical Name	Norway	United Kingdom	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nickel hydroxide (CAS #: 12054-48-7)	TWA: 0.05 mg/m ³ STEL: 0.05 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.2 mg/m ³ Ni inhalable fraction	TWA: 1 mg/m ³ Ni (vacated) TWA: 1 mg/m ³ Ni	IDLH: 10 mg/m ³ Ni TWA: 0.015 mg/m ³ except Nickel carbonyl Ni
Nickel (CAS #: 7440-02-0)	TWA: 0.05 mg/m ³ STEL: 0.05 mg/m ³	STEL: 1.5 mg/m ³ TWA: 0.5 mg/m ³	TWA: 1.5 mg/m ³ inhalable fraction	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³	IDLH: 10 mg/m ³ IDLH: 10 mg/m ³ Ni TWA: 0.015 mg/m ³ TWA: 0.015 mg/m ³ except Nickel carbonyl Ni
Potassium hydroxide (CAS #: 1310-58-3)	Ceiling: 2 mg/m ³	STEL: 2 mg/m ³	Ceiling: 2 mg/m ³	(vacated) Ceiling: 2 mg/m ³	Ceiling: 2 mg/m ³
Cobalt(II) oxide (CAS #: 1307-96-6)	TWA: 0.02 mg/m ³ STEL: 0.02 mg/m ³ STEL: 0.06 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.02 mg/m ³ Co	-	-

Derived No Effect Level (DNEL)

No information available

Predicted No Effect Concentration (PNEC)

No information available

8.2. Exposure controls**Engineering Controls**

Use with local exhaust ventilation. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles)
Hand Protection	Wear protective gloves
Skin and body protection	Suitable protective clothing
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls

Do not allow into any sewer, on the ground or into any body of water

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Solid
Color	Colorized
Odor	Odourless
Odor Threshold	Not determined
pH	Not determined
Melting point/freezing point	Not determined
Boiling point / boiling range	Not determined
Flash point	Not determined
Evaporation rate	Not determined
Flammability (solid, gas)	Not determined
Flammability Limit in Air	Not determined
Vapor Pressure	Not determined
Vapor density	Not determined
Density	Not determined
Relative density	Not determined
Specific gravity	Not determined
Water solubility	Not determined
Partition coefficient (LogPow)	Not determined
Autoignition temperature	Not determined
Decomposition temperature	Not determined
Kinematic viscosity	Not determined
Dynamic viscosity	Not determined
Explosive properties	Not predicted to be explosive.
Oxidizing properties	Not predicted to have oxidising properties.

9.2. Other information

No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

Heat, flames and sparks

10.5. Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases.

10.6. Hazardous decomposition products

None under normal use conditions

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
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Iron (CAS #: 7439-89-6)	98.6 g/kg bw (rat)	-	-
Nickel hydroxide (CAS #: 12054-48-7)	= 1515 mg/kg (Rat)	> 2 g/kg (Rat)	= 1200 mg/m ³ (Rat) 4 h
Nickel (CAS #: 7440-02-0)	> 9000 mg/kg (Rat)	-	-
Potassium hydroxide (CAS #: 1310-58-3)	= 333 mg/kg (Rat)	-	-
Polypropylene (CAS #: 9003-07-0)	>5 g/kg	-	-
Cobalt(II) oxide (CAS #: 1307-96-6)	= 159 mg/kg (Rat) = 202 mg/kg (Rat)	-	-
Lithium hydroxide (CAS #: 1310-65-2)	= 210 mg/kg (Rat)	-	= 960 mg/m ³ (Rat) 4 h

Skin corrosion/irritation

Non-irritating to the skin.

Serious eye damage/eye irritation

No eye irritation.

Sensitization

No sensitization responses were observed.

Germ cell mutagenicity

No information available.

Carcinogenicity

Chemical Name	European Union	IARC
Nickel hydroxide (CAS #: 12054-48-7)	Carc. 1A	Group 1
Nickel (CAS #: 7440-02-0)	Carc. 2	Group 2B
Polypropylene (CAS #: 9003-07-0)	-	Group 3
Cobalt(II) oxide (CAS #: 1307-96-6)	-	Group 2B

Reproductive toxicity

No information available.

STOT - single exposure

No information available.

STOT - repeated exposure

No information available.

Aspiration hazard

No information available.

SECTION 12: Ecological information**12.1. Toxicity**

Chemical Name	Algae/aquatic plants EC50	Fish LC50	Crustacea EC50
Iron (CAS #: 7439-89-6)	-	13.6: 96 h <i>Morone saxatilis</i> mg/L LC50 static	> 100 mg/L/48h (<i>Daphnia magna</i>)
Nickel (CAS #: 7440-02-0)	0.18 mg/L/72h <i>Pseudokirchneriella subcapitata</i> 0.174 - 0.311 mg/L/96h <i>Pseudokirchneriella subcapitata</i> static	100 mg/L/96h <i>Brachydanio rerio</i> 1.3 mg/L/96h <i>Cyprinus carpio</i> semi-static 10.4 mg/L/96h <i>Cyprinus carpio</i> static	100 mg/L/48h <i>Daphnia magna</i> 1 mg/L/48h <i>Daphnia magna</i> Static
Potassium hydroxide (CAS #: 1310-58-3)	-	80mg/L/96h <i>Gambusia affinis</i> static	-

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical Name	Partition coefficient (LogPow)
Potassium hydroxide (CAS #: 1310-58-3)	0.65 0.83

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

PBT/vPvB assessment information is not available as chemical safety assessment not conducted.

12.6. Other adverse effects

No information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products	Disposal should be in accordance with applicable regional, national and local laws and regulations
Contaminated packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations

SECTION 14: Transport information

14.1 UN Number	Not regulated
14.2 Proper shipping name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions	No information available
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Take note of Directive 94/33/EC on the protection of young people at work

Take note of Directive 92/85/EC on the protection of pregnant and breastfeeding women at work

International Inventories

Component	TSCA	DSL/NDSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	AICS
Iron 7439-89-6 (26.6)	X	X	X	-	X	X	X	X

Nickel hydroxide 12054-48-7 (2.7)	X	X	X	X	X	X	X	X
Nickel 7440-02-0 (6.3)	X	X	X	-	X	X	X	X
Potassium hydroxide 1310-58-3 (4.4)	X	X	X	X	X	X	X	X
Polypropylene 9003-07-0 (3.4)	X	X	-	X	X	X	X	X
Cobalt(II) oxide 1307-96-6 (1.8)	X	X	X	X	X	X	X	X
Lithium hydroxide 1310-65-2 (0.4)	X	X	X	X	X	X	X	X

"-" Not Listed

"X" Listed

15.2. Chemical safety assessment

No information available

SECTION 16: Other information

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Issue Date 08-Jun-2015
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Revision Note Not applicable

Key or legend to abbreviations and acronyms used in the safety data sheet

TWA - TWA (time-weighted average)

STEL - STEL (Short Term Exposure Limit)

Ceiling - Maximum limit value

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

Full text of H-Statements referred to under section 3

H302 - Harmful if swallowed

H332 - Harmful if inhaled

H315 - Causes skin irritation

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H317 - May cause an allergic skin reaction

H341 - Suspected of causing genetic defects

H350 - May cause cancer

H360D - May damage the unborn child

H372 - Causes damage to organs through prolonged or repeated exposure

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

H304 - May be fatal if swallowed and enters airways

H314 - Causes severe skin burns and eye damage

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

----- End of Safety Data Sheet -----