

Safety Data Sheet

29 CFR 1910.1200

Effective Date : 01/01-2024

Trade Name : Nickel Metal Hydride Rechargeable Button Cell

1 Identification

• Product identifier

• Trade name : Nickel Metal Hydride Rechargeable Button Cell

• Item No.:

H15-9V、H320BC、H260BC、H200BC、H150BC、H110BC、H80BC、H40BC、H20BC
H20-2/3AAA、H90AAA、H85AAA、H80AAA、H75AAA、H70AAA、H60AAA、H50AAA、
H35-2/3AAA、H30-2/3AAA、H18-1/4AAA、H16-1/4AAA、H250AA、H240AA、H230AA、H220AA、
H210AA、H200AA、H180AA、H160AA、H150AA、H100AA、H80AA、H70AA、H65-2/3AA、
H60-2/3AA、H30-1/3AA、H30-2/3AA、H900D、H700D、H510D、H450C、H400C、H350C、H300SC

• Recommended use of the chemical and restrictions on use :

• Application of the substance / the preparation : Electronic products

2 Hazard(s) identification

• Classification of the substance or mixture

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

This product is not classified as hazardous.

• Label elements

Symbols / Pictograms None

Signal word None

Hazard Statements Not applicable

Precautionary Statements Not applicable

• Other hazards

No information available

3 Composition / information on ingredients

• 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

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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	6.3	Skin Sens. 1 (H317) Carc. 2 (H351) STOT RE 1 (H372)
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)
Lithium hydroxide	215-183-4	1310-65-2	0.4	Acute Tox. 4 Skin Corr.1B

4 First-aid measures

• 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

• Most important symptoms and effects, both acute and delayed

No information available

• Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5 Fire-fighting measures

• Extinguishing media

Suitable extinguishing media

Unsuitable extinguishing media

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

No information available

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- **Special hazards arising from the substance or mixture**

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

- **Advice for firefighters**

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

6 Accidental release measures

- **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

- **Environmental precautions**

Local authorities should be advised if significant spillages cannot be contained

Prevent entry into waterways, sewers, basements or confined areas

- **Methods and material for containment and cleaning up**

Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13)

- **Reference to other sections**

See Section 7 for more information

See section 8 for more information

See section 13 for more information

7 Handling and storage

- **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

- **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

- **Specific end use(s)**

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

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8 Exposure controls / personal protection

• Control parameters

Chemical Name	Australia	Austria	Belgium	Denmark	European Union
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: 0.05mg/m ³	TWA: 1 mg/m ³	TWA:0.1mg/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:	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: 0.25mg/ 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: 0.05mg/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: 1mg/ m ³ Ni	IDLH: 10 mg/m ³ Ni TWA: 0.015 mg/ m ³ except Nickel carbonyl Ni

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Nickel (CAS #: 7440-02-0)	TWA: 0.05mg/m ³ STEL: 0.05mg/m ³	STEL: 1.5 mg/ m ³ TWA: 0.5 mg/ m ³	TWA: 1.5 mg/ m ³ inhalable fraction	TWA: 1mg/m ³ (vacated) TWA: 1mg/m ³	IDLH: 10mg/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: 2mg/ m ³	(vacated) Ceiling: 2mg/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: 0.1mg/ 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

• Exposure controls

• Engineering Control

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.

9 Physical and chemical properties

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
Flammability (solid, gas):	Not determined
Flammability Limit in Air:	Not determined

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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

• **Other information**

No information available.

10 Stability and reactivity

• **Reactivity**

No information available.

• **Chemical stability**

Stable under normal conditions.

• **Possibility of hazardous reactions**

None under normal processing.

• **Conditions to avoid**

Heat, flames and sparks.

• **Incompatible materials**

Strong oxidizing agents. Strong acids. Strong bases.

• **Hazardous decomposition products**

None under normal use conditions.

11 Toxicological information

• **Information on toxicological effects:**

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
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

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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.

12 Ecological information

Toxicity

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

Persistence and degradability

No information available.

Bioaccumulative potential

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

Mobility in soil

No information available.

Results of PBT and vPvB assessment

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

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• Other adverse effects

No information available

13 Disposal considerations

• 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

14 Transport information

- UN Number Not regulated
- Proper shipping name Not regulated
- Hazard Class Not regulated
- Packing Group Not regulated
- Environmental hazards Not regulated
- Special precautions Not regulated
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not regulated

15 Regulatory information

• 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 (22.7)	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

• Chemical safety assessment

No information available.

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16 Other information

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

Issue Date	01-Jan-2024
Revision date	01-Jan-2024
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.

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