Material Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product name:	Ni-Zn battery, rechargeable

Size	Nominal Voltage	Capacity	Energy content
HR03, Micro (AAA)	1.6 V	550 mAh	0.88 Wh

Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	15.12.2022

1.1 Product identifier

Trade name: Ni-Zn Battery

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

Application of the substance / the mixture: Household & Industrial power

Remark:

This product is likely to be classified as article with substances not intended to be released and is out of scope of a SDS as set out in Regulation (EC) No 1907/2006. This SDS is generated for applicant's reference only

2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

GHS08 health hazard

Resp. Sens. 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Muta. 2	H341	Suspected of causing genetic defects.
Carc. 1A	H350i	May cause cancer by inhalation.
Repr. 1B	H360D	May damage the unborn child.
STOT RE 1	H372	Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

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GHS09 environment

Aquatic Acute 1	H400	Very toxic to aquatic life.
Aquatic Chronic 1	H410	Very toxic to aquatic life with long lasting effects.

GHS07

Acute Tox. 4	H302	Harmful if swallowed.
Acute Tox. 4	H332	Harmful if inhaled.
Skin Irrit. 2	H315	Causes skin irritation.
Skin Sens. 1	H317	May cause an allergic skin reaction.

Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of Regulation (EC) No.1272/2008.

Classification system:

The classification is according to the latest edition of EU Regulation (EC) No. 1272/2008, and extended by company and literature data.

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS07 **GHS08** **GHS09**

Signal word

Danger

Hazard-determining components of labelling:

Nickel dihydroxide

Nickel

Hazard statements

H302+H332 Harmful if swallowed or 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.

H350i May cause cancer by inhalation.

H360D May damage the unborn child.

H372 Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 [In case of inadequate ventilation] wear respiratory protection.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

Restricted to professional users.

2.3 Other hazards:

Results of PBT and vPvB assessment

PBT: Not applicable

vPvB: Not applicable

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3. Composition/information on ingredients

3.2 Mixtures

Description:

Mixture of the substances listed below with nonhazardous additions.

For the wording of the listed hazard statements refer to section 16.

Composition:		
CAS: 12054-48-7 EINECS: 235-008-5 Index number: 028-008-00-X	Nickel dihydroxide Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1A, H350i; Repr. 1B, H360D; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Irrit. 2, H315; Skin Sens. 1, H317	48.0%
CAS: 1314-13-2 EINECS: 215-222-5 Index number: 030-013-00-7	Zinc oxide Aquatic Acute 1, H400; Aquatic Chronic 1, H410	36.5%
CAS: 7440-66-6 EINECS: 231-175-3	Zinc Aquatic Acute 1, H400; Aquatic Chronic 1, H410	10.0%
CAS: 7440-02-0 EINECS: 231-111-4 Index number: 028-002-00-7	Nickel Carc. 2, H351; STOT RE 1, H372; Skin Sens. 1, H317	2.5%
CAS: 1344-28-1 EINECS: 215-691-6	Aluminium oxide substance with a Community workplace exposure limit	1.8%
CAS: 1304-76-3 EINECS: 215-134-7	Dibismuth trioxide	1.2%

4. First aid measures

4.1 Description of first aid measures

General description:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

After eye contact:

Rinse opened eye for several minutes under running water.

After swallowing:

Call for a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

Use fire extinguishing methods suitable to surrounding conditions.

5.2 Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

5.3 Advice for firefighters

Protective equipment: Mouth respiratory protective device.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

6.2 Environmental precautions

Do not allow product to reach sewage system or any water sourse.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. Handling and storage

7.1 Precautions for safe handling

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

For the general occupational hygienic measures refer to Section 8.

Information about fire - and explosion protection:

Keep respiratory protective device available.

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Not required.

Further information about storage conditions:

Keep container tightly sealed.

7.3 Specific end use(s)

No further relevant information available.

8. Exposure controls/personal protection

8.1 Control Parameters

Ingredients with limit values that require monitoring at the workplace:

12054-48-7 Nickel dihydroxide (48.0%)	
WEL (Great Britain)	Long-term value: 0.5 mg/m³ as Ni; Sk; Carc
AGW (Germany)	Long-term value: 0.030E mg/m³ 8(II);AGS, Sh, Y, 10, 24, 31
TRGS 910 (Germany)	Short-term value: 0.006 (A) mg/m³ Long-term value: 0.006 (A) mg/m³ 8, Konzentrationen beziehen sich auf Ni-Gehalt
VLEP (France)	Long-term value: 1 mg/m³ C1A, M2, R1B
1314-13-2 zinc oxide (36.5%)	
MAK (Germany)	Long-term value: 1A mg/m³ Rauch
VLEP (France)	Long-term value: 5* 10** mg/m³ *fumées **poussières
7440-66-6 Zinc (10.0%)	
MAK (Germany)	Long-term value: 0.1A* 2E** mg/m³ *alveolengängig; **einatembar
7440-02-0 Nickel (2.5%)	
WEL (Great Britain)	Long-term value: 0.5 mg/m³ as Ni; Sk; Carc
AGW (Germany)	Long-term value: 0.006A; 0.030E* mg/m³ 8(II);AGS, 24, Sh, Y, 10*, 31*
VLEP (France)	Long-term value: 1 mg/m³ C2
1344-28-1 Aluminium oxide (1.8%)	
WEL (Great Britain)	Long-term value: 10* 4** mg/m³ *inhalable dust **respirable dust
AGW (Germany)	Long-term value: 1.25* 10** mg/m³ 2(II);*alveolengängig**einatembar; AGS, DFG
VLEP (France)	Long-term value: 10 mg/m³

Regulatory information

WEL (Great Britain): EH40/2020

AGW (Germany): TRGS 900

VLEP (France): ED 1487 12.2019

MAK (Germany): MAK- und BAT-Liste

DNELs:

Not available

PNECs:

Not available

Additional information:

The lists valid during the making were used as basis.

8.2 Exposure controls

Based on the composition shown in Section 3, the following measures are suggested for occupational safety measure.

Appropriate engineering controls:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

See Section 7 for information about design of technical facilities.

Personal protective equipment

Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

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Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles

Environmental exposure controls:

Control measures must be made in accordance with Community environmental protection legislation.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Form:	Solid, cylindrical (sealed unit)
Colour:	Specific
Odour:	Odourless
Odour threshold:	Not available
pH-value:	Not available

Change in condition

Melting point/Freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash point:	Not available
Flammability (solid, gas):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Self-igniting:	Not available
Explosive properties:	Not available
Explosion limits:	Lower: Not available
	Upper: Not available
Oxidising properties:	Not available
Vapour pressure:	Not available
Density:	Not available
Relative density:	Not available
Vapour density:	Not available
Evaporation rate:	Not available
Solubility in / Miscibility with water:	Not available
Partition coefficient: n-octanol/water:	Not available
Viscosity Dynamic:	Not available
Kinematic:	Not available

9.2 Other information

No further relevant information available

10. Stability and reactivity

10.1 Reactivity:

No further relevant information available.

10.2 Chemical stability

No further relevant information available.

10.3 Possibility of hazardous reactions

No dangerous reactions known.

10.4 Conditions to avoid

No further relevant information available.

10.5 Incompatible materials

No further relevant information available.

10.6 Hazardous decomposition products

No dangerous decomposition products known.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

Harmful if swallowed or if inhaled.

LD/LC50 values relevant for classification:

Not available

Skin corrosion/irritation:

Causes skin irritation.

Serious eye damage/irritation:

Based on available data, the classification criteria are not met.

Respiratory or skin sensitization:

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Germ cell mutagenicity

Suspected of causing genetic defects.

Carcinogenicity

May cause cancer by inhalation.

Reproductive toxicity

May damage the unborn child.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

Aspiration hazard

Based on available data, the classification criteria are not met.

12. Ecological information

12.1 Toxicity

Aquatic toxicity:

No further relevant information available.

12.2 Persistence and degradability

No further relevant information available.

12.3 Bioaccumulative potential

No further relevant information available.

12.4 Mobility in soil

No further relevant information available.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects

No further relevant information available.

12.7 Additional ecological information

General notes:

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water.

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

13. Disposal considerations

13.1 Waste treatment methods

Recommendation:

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging

Recommendation:

Disposal must be made according to official regulations.

Recommended cleansing agents:

Water, if necessary together with cleansing agents.

14. Transport information

14.1 UN-Number

ADR/RID/ADN, IATA: Not applicable

IMDG: UN3496

14.2 UN proper shipping name

ADR/RID/ADN, IATA: Not applicable

IMDG: Batteries, nickel-metal hydride, MARINE POLLUTANT

14.3 Transport hazard class(es)

ADR/RID/ADN, IATA

Class: Not applicable

Label: -

IMDG

Class: 9 Miscellaneous dangerous substances and articles.

Label: 9

14.4 Packing group

ADR/RID/ADN, IMDG, IATA: Not applicable

14.5 Environmental hazards

Marine pollutant: Symbol (fish and tree)

14.6 Special precautions for user: Not applicable

Danger code (Kemler): -

EMS Number: F-A, S-I

Stowage Category: A

Stowage Code: SW1 Protected from sources of heat.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

14.8 Transport/Additional information:

IMDG

Limited quantities: (LQ) 0

Excepted quantities (EQ): Code: E0

Not permitted as Excepted Quantity

IATA Remarks:

Referring to the Certification for Safe Transport of Chemical Goods (Report No. 202300009171717) issued by Shanghai Institute of Chemical Industry Testing Co., Ltd, AA Nickel zinc battery is tested / assessed and is not subject to IATA Dangerous Goods Regulations (DGR) 64th Edition to special provision A123 (Effective Date: 2023-01-01) (upon supplier's information)

15. Regulatory information

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

MAK (German Maximum Workplace Concentration)

12054-48-7	Nickel dihydroxide	1
7440-02-0	Nickel	1
1344-28-1	Aluminium oxide	2

Directive 2012/18/EU

Named dangerous substances - ANNEX I

None of the ingredients is listed.

Seveso category

E1 Hazardous to the Aquatic Environment

Qualifying quantity (tonnes) for the application of lower-tier requirements

100 t

Qualifying quantity (tonnes) for the application of upper-tier requirements

200 t

DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

None of the ingredients is listed.

National regulations:

Information about limitation of use:

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

Water hazard class:

Water hazard class 3 (Self-assessment): extremely hazardous for water.

Other regulations, limitations and prohibitive regulations

SVHC Candidate List of REACH Regulation Annex XIV Authorisation (10/6/2022)

None of the ingredients is listed

REACH Regulation Annex XVII Restriction (13/12/2021), See Section 16 for information about restriction of use.

None of the ingredients is listed

REACH Regulation Annex XIV Authorisation List (8/4/2022)

None of the ingredients is listed

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

16. Other information

Relevant hazard statements

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.

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

H341 Suspected of causing genetic defects.

H350i May cause cancer by inhalation.

H351 Suspected of causing cancer.

H360D May damage the unborn child.

H372 Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects

Classification according to Regulation (EC) No. 1272/2008	
Acute toxicity - oral Acute toxicity - inhalation Skin corrosion/irritation Respiratory sensitisation Skin sensitisation Germ cell mutagenicity Carcinogenicity Reproductive toxicity Specific target organ toxicity (repeated exposure) Hazardous to the aquatic environment - short-term (acute) aquatic hazard Hazardous to the aquatic environment - long-term (chronic) aquatic hazard	The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No. 1272/2008.

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, 1272/2008 and Regulation (EU) No 2015/830.

DISCLAIMER OF LIABILITY

The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reason, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

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Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity - oral – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Muta. 2: Germ cell mutagenicity – Category 2

Carc. 1A: Carcinogenicity – Category 1Ai

Carc. 2: Carcinogenicity – Category 2

Repr. 1B: Reproductive toxicity – Category 1B

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1