

# Material Safety Data Sheet

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

<b>Product name:</b>	Ni-MH battery, rechargeable
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Size	Nominal Voltage	Capacity	Energy content
LR20, Mono (D)	1.2 V	9500 mAh	11.4 Wh

<b>Manufacturer:</b>	Conrad Electronic SE
<b>Address:</b>	Klaus-Conrad-Str. 1, D-92240 Hirschau
<b>Telephone:</b>	+49 (0) 9604 / 40 - 8988
<b>Date of issue:</b>	07.01.2022

## 2. Hazards Identification

### Emergency overview:

This product is a battery. Intended use of the product should not result in exposure to the chemical substance. In case of rupture the below hazards exist.

### Classification according to GHS

Acute toxicity oral (4)

Acute toxicity inhalation: Dusts and mists (4)

Skin corrosion/irritation (1A, 2B, 1C)

Sensitisation, respiratory (1, 1A, 1B)

Sensitisation, skin (1, 1A, 1B)

Carcinogenicity (2)

Specific target organ toxicity, single exposure; Respiratory tract irritation (3)

Specific target organ toxicity repeated exposure (2)

Hazardous to the aquatic environment, long-term hazard (1)

### Hazard statement(s):

H302 Harmful if swallowed

H332 Harmful inhaled

H314 Causes severe skin burns and eye damage

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

H317 May cause an allergic skin reaction

H351 Suspected of causing cancer

H335 May cause respiratory irritation

H373 May cause damage to organs through prolonged or repeated exposure

H410 Very toxic to aquatic life with long lasting effects

## Material Safety Data Sheet

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### Precautionary statement(s):

#### Prevention:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dusts or mists.
- P264 Wash skin and clothing thoroughly after handling.
- P270 Do not eat drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P273 Avoid release to the environment.
- P280 Wear protective gloves protective clothing eye protection, face protection.

#### Response:

- P330 Rinse mouth.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- 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.
- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P363 Wash contaminated clothing before reuse.
- P321 Specific treatment (See additional emergency instructions).
- P391 Collect spillage Storage.
- P405 Store locked up.

#### Disposal:

- P501 Send contents to approved waste treatment plants.

#### Other hazards

- Physical and chemical hazards: See Section 10
- Human health hazards: See Section 11
- Environmental hazards: See Section 12

## Material Safety Data Sheet

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### 3. Composition/Information on Ingredients

Chemical characterization: Mixture

Chemical Composition	CAS No.	EC No.	Weight(%)
Neodymium	7440-00-8	7440-00-8	0.1
Nickel	7440-02-0	231-111-4	35.5
Nickel hydroxide	12054-48-7	235-008-5	28.5
Lanthanum	7439-91-0	231-099-0	12.5
Cerium	7440-45-1	231-154-9	11
Cobalt	7440-48-4	231-158-0	1.6
Manganese	7439-96-5	231-105-1	3.0
Potassium	1310-58-3	215-181-3	1.0
Sodium hydroxide	1310-73-2	215-185-5	0.5
Lithium hydroxide	1310-65-2	215-183-4	0.3

### 4. First Aid Measures

#### Description of first aid measures

##### General information

No special measures required.

##### After eye contact

Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.

##### After skin contact

Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

##### After inhalation

Remove victim to fresh area, Administer artificial respiration if breathing is difficult. Seek medical attention.

##### After swallowing

Do not induce vomiting. Get medical attention.

##### Personal protective equipment for first-aid responders:

No data available.

##### Most important symptoms/effects acute and delayed:

No data available.

##### Indication of immediate medical attention and special treatment needed:

Treat symptomatically

## Material Safety Data Sheet

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### 5. Fire Fighting Measures

**Suitable extinguishing media:**

Use extinguishing agent suitable for local conditions and the surrounding environment, such as dry powder, CO<sub>2</sub>.

**Unsuitable extinguishing media:**

No data available.

**Specific Hazards arising from the chemical:**

Battery may burst and release hazardous decomposition products when exposed to a fire situation. Some may burn but none ignite readily. Containers may explode when heated. Some may be transported hot.

**Specific protective actions for fire-fighters:**

**Protective equipment:**

Wear self-contained respirator. Wear fully protective impervious suit.

### 6. Accidental Release Measures

**Personal precautions:**

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

**Protective equipment:**

No data available.

**Emergency procedures:**

Remove ignition sources, evacuate area. Sweep up using a method that does not generate dust. Collect as much of the spilled material as possible, place the spilled material into a suitable disposal container. Keep spilled material out of sewers, ditches and bodies of water.

**Environmental precautions:**

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

**Methods and materials for containment and cleaning up:**

For all waste handling must refer to United Nations, National and Local Regulations for disposal.

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

**Precautions for safe handling**

Avoid short circuiting the battery. Avoid mechanical damage of the battery. Do not open or disassemble. Batteries may explode or cause burns, if disassembled crushed or exposed to fire on high temperatures. Do not short or install with incorrect polarity. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a wellventilated area. Prevent concentration in hollows and sumps.

**Conditions for safe storage, including any incompatibilities:**

Store in a cool, dry well-ventilated place. Keep away from heat avoiding the long time of sunlight.

## Material Safety Data Sheet

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### 8. Exposure Controls/Personal Protection

#### Control parameters

CAS No.	ACGIH	NIOSH	OSHA
7440-00-8	N/A	N/A	N/A
7440-02-0	TLV-TWA 1.5mg/m <sup>3</sup>	REL-TWA0.015mg/m <sup>3</sup>	PEL-TWA 1mg/m <sup>3</sup>
12054-48-7	N/A	N/A	N/A
7439-91-0	N/A	N/A	N/A
7440-45-1	N/A	N/A	N/A
7440-48-4	TLV-TWA 0.02mg/m <sup>3</sup>	REL-TWA 0.05mg/m <sup>3</sup>	PEL-TWA 0.1mg/m <sup>3</sup>
7439-96-5	TLV-TWA 0.02mg/m <sup>3</sup>	TLV-TWA 0.1mg/m <sup>3</sup>	N/A
1310-58-3	TLV-Peak 2mg/m <sup>3</sup>	REL-Peak 2mg/m <sup>3</sup>	N/A
1310-73-2	N/A	N/A	N/A
1310-65-2	N/A	N/A	N/A

#### Appropriate engineering controls:

The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work.

#### Personal Protective Equipment:

##### Respiratory protection:

Wear suitable protective mask. For a large large number of battery leakages, wear chemical protective clothing, including self-contained breathing apparatus.

##### Hand Protection:

Wear appropriate protective gloves to reduce skin contact.

##### Eye Protection:

Wear safety goggles or eye protection combined with respiratory protection.

##### Skin and Body Protection:

Working environment required, wear suitable protective clothing to minimize contact with skin. The type of protective equipment must be according to the concentration and the content of certain hazardous substances in the workplace.

## Material Safety Data Sheet

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### 9. Physical and Chemical Properties

#### Information on basic physical and chemical properties

Colour:	Specific.
Physical State:	Cylindrical
Odour:	Not available
PH:	Not available
Melting point/freezing point:	Not available
Boiling point or initial boiling point and boiling range:	Not available
Flash Point:	Not available
Flammability:	Not available
Solubility:	Not available
Lower and upper explosion limit/flammability limit:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Kinematic viscosity:	Not available
Partition coefficient: n-octanol/water(log value):	Not available
Vapour pressure:	Not available
Density and/or relative density:	Not available
Relative vapour density:	Not available
Particle characteristics:	Not available
Other information:	Voltage 1.2 V/cell

### 10. Stability and Reactivity

#### Reactivity:

No data available

#### Chemical stability:

Stable

#### Possibility of hazardous reactions:

No data available

#### Conditions to Avoid:

Flames, sparks and other sources of ignition, incompatible materials

#### Incompatible materials:

Oxidizing agents acid base

#### Hazardous decomposition products:

Carbon monoxide, carbon dioxide

## Material Safety Data Sheet

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### 11. Toxicological Information

**Acute Toxicity:**

CAS No.	LC50/LD50
7440-00-8	No data available
7440-02-0	LD50 Rat (oral): >9000mg/kg
12054-48-7	LD50 Rat(oral): 1600mg/kg; LC50 Rat (Inhalation): Dusts and mists): 1200mg/m <sup>3</sup>
7439-91-0	No data available
7440-45-1	No data available
7440-48-4	LD50 Rat (oral): 6171mg/kg
7439-96-5	LD50 Rat (oral): 9000mg/kg
1310-58-3	LD50 Rat (oral): 284mg/kg
1310-73-2	LD50 Rat (oral): 140~340mg/kg
1310-65-2	LD50 Rat (oral): 210mg/kg; LC50 Rat (Inhalation): Dusts and mists):0.96mg/L

**Skin corrosion/irritation:** No data available.**Serious eye damage/irritation:** No data available.**Respiratory or Skin sensitization:** No data available.**Germ Cell mutagenicity:** No data available**Carcinogenicity:** No data available.**Reproductive toxicity:** No data available.**Specific target organ toxicity-Single exposure:** No data available.**Specific target organ toxicity-Repeated exposure:** No data available**Aspiration hazard:** No data available.**Information on the likely routes of exposure:** No data available.**Eye:** No data available.**Skin:** No data available.**Ingestion:** No data available.**Inhalation:** No data available.

## Material Safety Data Sheet

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### 12. Ecological Information

**Ecological Toxicity:**

CAS# 1310-73-2

LC50:40mg/L - Crustacea (Cenodaphnia quadrangular)-48h

**Persistence and degradability:**

No data available.

**Bioaccumulative Potential:**

No data available

**Mobility in Soil:**

No data available.

**Other adverse effects:**

No data available.

### 13. Disposal Considerations

**Disposal methods:**

**Recommendation:**

Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packaging:**

**Recommendation:**

Disposal must be made according to official regulations.



## Material Safety Data Sheet

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### 14. Transport Information

**UN or ID Number, IATA, IMDG**

N/A

**Proper Shipping Name/Description, IATA, IMDG**

N/A

**Class or Div. (Sub Hazard), IATA, IMDG**

Not Subjected for transport of dangerous goods

**Packing Group, IATA, IMDG**

N/A

**Hazard Label, IATA, IMDG**

N/A

**Environmental hazards**

Marine pollutant: No

**Special precautions for user**

No information available

**Transport information:**

The NI-MH battery is exempt from dangerous goods. It is considered non-dangerous goods by the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) DGR 63IATA Special Provisions A199, International Maritime Dangerous Goods Regulations (IMDG)(40-20) IMDG Special Provisions 963.

**S.P.A199** The UN number UN 3496 is only applicable in sea transport. Nickel-metal hydride batteries, or nickel-metal hydride battery-powered devices, equipment or vehicles having the potential of a dangerous evolution of heat are not subject to these Regulations provided they are prepared for transport so as to prevent:

(a) a short-circuit (e.g. in the case of batteries by the effective insulation of exposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals)

and

(b) unintentional activation.

The words "Not Restricted" and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6 when an Air Waybill is issued.

Separate batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport.

**Transport Fashion:**

By air, by sea

## Material Safety Data Sheet

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### 15. Regulatory Information

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

CAS No.	TSCA	IECSC	DSL/NDSL	EINECS/ELINCS/NLP
7440-00-8	Listed	Listed	DSL Listed	Listed
7440-02-0	Listed	Listed	DSL Listed	Listed
12054-48-7	Listed	Listed	DSL Listed	Listed
7439-91-0	Listed	Listed	DSL Listed	Listed
7440-45-1	Listed	Listed	DSL Listed	Listed
7440-48-4	Listed	Listed	DSL Listed	Listed
7439-96-5	Listed	Listed	DSL Listed	Listed
1310-58-3	Listed	Listed	DSL Listed	Listed
1310-73-2	Listed	Listed	DSL Listed	Listed
1310-65-2	Listed	Listed	DSL Listed	Listed

### 16. Other Information

To the best of our knowledge, the information contained herein is accurate. However neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

#### Other Information:

CAS: (Chemical Abstracts Service)

EC: (European Commission)

ACGIH: (American Conference of Governmental Industrial Hygienists)

NIOSH: (US National Institute for Occupational Safety and Health)

OSHA: (US Occupational Safety and Health)

TLV: (Threshold Limit Value)

TWA: (Time Weighted Average)

STEL: (Short Term Exposure Limit)

PEL: (Permissible Exposure Level)

REL: (Recommended Exposure Limit)

PC-STEL: (Permissible concentration-shor time exposure limit)

PC-TWA: (Permissible concentration-time weighted average)

IARC: (International Agency for Research on Cancer)

LC50: (Lethal concentration, 50 percent kill)

LD50: (Lethal dose, 50 percent kill)

## Material Safety Data Sheet

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EC50: (Median effective concentration)

BCF: (Bioconcentration Factor)

BOD: (Biochemical oxygen demand)

IECSC: (Inventory of Existing Chemical Substances in China)

NOEC: (No observed effect concentration)

NTP: (US National Toxicology Program)

RTECS: (Registry of Toxic Effects of Chemical Substances)

TOC: (Total Organic Carbon)

TSCA: (Toxic Substances Control Act of USA)

DSL: (the Domestic Substances List of Canada)

NDSL: (the Non-domestic Substances List of Canada)

IATA: (International Air Transport Association)

IMDG: (International Maritime Dangerous Goods)

TDG: (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations)