

## Material Safety Data Sheet

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### 1. Product & Company Identification

<b>Product:</b>	NiMH rechargeable battery (60H ZLF)
<b>Manufacturer:</b>	Conrad Electronic SE
<b>Nominal voltage:</b>	2,4 V
<b>Nominal capacity:</b>	80 mAh
<b>Address:</b>	Klaus-Conrad-Str. 1, D-92240 Hirschau
<b>Telephone:</b>	+49 (0) 9604 / 40 - 8988
<b>Date of issue:</b>	14.10.2016

### 2. Hazards Identification

**Hazard description:**

A sealed Ni-Mh Battery is not hazardous in normal use on principle.

**Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

**Classification system:**

The classification is according to the latest editions of 1907/2006/EC, EU Commission Directive 1999/45/EC,67/548/EEC, and extended by company and literature data.

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### 3. Physical Data for NiMH battery

#### Chemical characterization: Description:

The substance listed below with nonhazardous additions. For the wording of listed risk phrases refer to section 16.

Dangerous components		
CAS: 7440-02-0 EINECS: 231-111-4 EU number: 028-002-00-7	Nickel Carc. Cat. 3; T, Xi; R 40-43-48/23	15%-30%
CAS: 11113-74-9 EINECS: 234-348-1 EU number: 028-008-00-X	Nickel hydroxide Carc. Cat. 1, Muta. Cat. 3, Repr. Cat. 2; T, Xi, N; R 49-61-20/22-38-42/43-48/23-68-50/53	20%-40%
CAS: 7439-96-5 EINECS: 231-105-1	Manganese Xn; R 48	4.0%-5.5%
CAS: 1310-58-3 EINECS: 215-181-3 EU number: 019-002-00-8	Potassium hydroxide C, Xn; R 22-35	3%-6%
CAS: 7440-48-4 EINECS: 231-158-0 EU number: 027-001-00-9	Cobalt Xn, Xi; R 42/43-53	1%-5%
CAS: 7440-00-8 EINECS: 231-109-3	Neodymium Xi, F; R 11-14/15-36/37/38	0%-2.5%
CAS: 7429-90-5 EINECS: 231-072-3 EU number: 013-002-00-1	Aluminium F; R 11-15	0.2%-1.2%
CAS: 7440-10-0 EINECS: 231-120-3	Praseodymium F; R 170	1.5%-6%

Non-dangerous components		
CAS: 7439-89-6 EINECS: 231-096-4	Iron	10%-20%
CAS: 7439-91-0 EINECS: 231-099-0	Lanthanum	5%-10%
CAS: 9003-07-0	Polipropene 25	0.1%-1%
CAS: 7732-18-5 EINECS: 231-791-2	Pure water	5%-10%
CAS: 7440-45-1 EINECS: 231-154-9	Cerium	2%-4%
CAS: 32131-17-2	Nylon-66	0.2%-6%
CAS: 8052-42-4 EINECS: 232-490-9	Asphalt	0.01%-0.3%
CAS: 7440-50-8 EINECS: 231-159-6	Copper	0.01%-0.1%

Remark: Polipropene 25 (CAS No.: 9003-07-0):  
Asphalt (CAS No.: 8052-42-4)

Synonym: Polypropylene  
Synonym: Asphaltum

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### 4. First-aid Measures

**General information:**

If exposure to internal materials within battery due to damaged outer casing, the following actions are recommended.

**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:**

Rinse with water.

**After eye contact:**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing:**

Drink plenty of water and provide fresh air. Call for a doctor immediately.

### 5: Fire-fighting Measures

**Suitable extinguishing agents:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Protective equipment:**

Wear fully protective suit.

### 6. Accidental release measures

**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

**Measures for environmental protection:**

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

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

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

**Measures for cleaning/collecting:**

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

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### 7. Handling and Storage

#### Handling

**Information for safe handling:**

No special measures required.

**Information about fire - and explosion protection:**

Keep respiratory protective device available.

Protect against electrostatic charges.

Prevent impact and friction. Protect from heat

#### Storage

**Requirements to be met by storerooms and receptacles:**

Store in a cool location.

**Information about storage in one common storage facility:**

Store away from flammable substances.

**Further information about storage conditions:**

Keep container tightly sealed. Store in cool, dry conditions in well sealed receptacles.

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### 8. Exposure Controls/Personal Protection

Additional information about design of technical facilities: No further data; see item 7.

<b>Ingredients with limit values that require monitoring at the workplace:</b>	
<b>7440-02-0 Nickel</b>	
PEL (USA)	1 mg/m <sup>3</sup>
REL (USA)	0,015 mg/m <sup>3</sup> , elemental
TLV (USA)	1,5* mg/m <sup>3</sup> , elemental; *as inhalable fraction
MAK (Germany)	einatembare Fraktion; vgl. Abschn. XIII
<b>7440-50-8 Copper</b>	
PEL (USA)	1* 0,1** mg/m <sup>3</sup> as Cu *dusts and mists **fume
REL (USA)	1* 0,1 R** mg/m <sup>3</sup> as Cu *dusts and mists **fume
TLV (USA)	Short-term value: 0,1** mg/m <sup>3</sup> , Long-term value: 1* 0,2** mg/m <sup>3</sup> *dusts and mists; **fume; as Cu <sub>0</sub>
MAK (Germany)	1E mg/m <sup>3</sup>
<b>7439-96-5 Manganese</b>	
PEL (USA)	Short-term value: C 5* ** mg/m <sup>3</sup>
REL (USA)	as Mn *and inorganic compounds **fume
TLV (USA)	Short-term value: 3* ** mg/m <sup>3</sup> , Long-term value: 1* ** mg/m <sup>3</sup>
AGW (Germany)	as Mn *and inorganic compounds **fume 0,2* ** mg/m <sup>3</sup> as Mn *and inorganic compounds **fume 0,5E mg/m <sup>3</sup> DFG, Y, 10
<b>1310-58-3 Potassium hydroxide</b>	
REL (USA)	C2 mg/m <sup>3</sup>
TLV (USA)	Short-term value: C2 mg/m <sup>3</sup>
<b>7440-48-4 Cobalt</b>	
PEL (USA)	0,1* mg/m <sup>3</sup> as Co; *for metal dust & fume, as Co
REL (USA)	0,05* mg/m <sup>3</sup> inorg. compds.: *metal dust & fume, as Co
TLV (USA)	0,02 mg/m <sup>3</sup> as Co; BEI
MAK (Germany)	einatembare Fraktion; vgl. Abschn. XIII
<b>7429-90-5 Aluminium</b>	
PEL (USA)	15* 5** mg/m <sup>3</sup> , Metal dust *total dust **respirable fraction
REL (USA)	10* 5** mg/m <sup>3</sup> , Metal dust *total dust **respirable fraction
TLV (USA)	1* mg/m <sup>3</sup> *as respirable fraction
AGW (Germany)	3* 10** mg/m <sup>3</sup> , 2(II); *alveolengängige **einatembare Fraktion; AGS
<b>8052-42-4 Asphalt</b>	
REL (USA)	Short-term value: C 5* mg/m <sup>3</sup> *15-min
TLV (USA)	0,5* mg/m <sup>3</sup> *inh. fraction; as benzene-soluble aerosol; BEIp
MAK (Germany)	Dampf und Aerosol

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**DNELs:** Not available

**PNECs:** Not available

**Additional information:** The lists valid during the making were used as basis.

### **Personal protective equipment**

#### **General protective and hygienic measures:**

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 eyes and skin.

#### **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

#### **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.

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### 9. Physical and chemical properties

<b>General Information</b>	
Form:	Columniform, solid battery
Colour:	Green fruit
Odour:	Odourless
Change in condition	
Melting point/Melting range:	Not available
Boiling point/Boiling range:	Not available
Flash point:	Not available
Flammability (solid, gaseous):	Not available
Ignition temperature:	Not available
Self-igniting:	Product is not selfigniting.
Danger of explosion:	Extreme risk of explosion by fire or other sources of ignition.
Explosion limits:	
Lower:	Not available
Upper:	Not available
Oxidizing 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
pH-value:	Not available
Segregation coefficient (n-octanol/water):	Not available
Viscosity: Dynamic:	Not available

### 10. Stability and reactivity

**Thermal decomposition/conditions to be avoided:**

No decomposition if used according to specifications.

**Dangerous decomposition products:**

No dangerous decomposition products known

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### 11. Toxicological information

#### Acute toxicity

#### LD/LC50 values relevant for classification:

1310-58-3 Potassium hydroxide

Oral LD50 273 mg/kg (rat)

7440-48-4 Cobalt

Oral LD50 6170 mg/kg (rat)

7439-96-5 Manganese

Oral LD50 9000 mg/kg (rat)

7439-89-6 Iron

Oral LD50 30 mg/kg (rat)

**Primary irritant effect** on the skin: No irritant effect.

on the eye: No irritating effect.

**Sensitization:** No sensitizing effects known.

**Toxicokinetics, metabolism and distribution:** Not available

**Acute effects (acute toxicity, irritation and corrosivity):** Not available

**Repeated dose toxicity:** Not available

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):** Not available

### 12. Ecological information

**Information about elimination (persistence and degradability):** Not available

#### Behaviour in environmental systems

**Mobility and bioaccumulation potential:** Not available

#### Ecotoxicological effects

**Aquatic toxicity:** Not available

**Remark:** Toxic for fish

#### Additional ecological information: General notes:

No ecological impacts expected under normal use conditions.

The materials contained in this product may only represent below ecological impact if the integrity of the battery is compromised; physically or electrical y abused.

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

Must not reach sewage water or drainage ditch undiluted or unneutralized.

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

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

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

**PBT assessments:** Not available



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### 13. Disposal considerations

**Product**

**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.

### 14. Transport information

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 56th, IATA Special Provisions A123, International Maritime Dangerous Goods Regulations (IMDG), or «Recommendations on the Transport of Dangerous Goods Model Regulations» (17th).

S.P. A123 This entry applies to Batteries, electric storage, not otherwise listed in Subsection 4.2–List of Dangerous Goods. Examples of such batteries are: alkali-manganese, zinc-carbon, nickel-metal hydride and nickel-cadmium batteries. Any electrical battery or battery powered device, equipment or vehicle having the potential of dangerous evolution of heat must be 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) is forbidden from transport.

(b) accidental 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.

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### 15. Regulatory information

#### Law Information:

- «Dangerous Goods Regulation»
- «Recommendations on the Transport of Dangerous Goods Model Regulations»
- «International Maritime Dangerous Goods»
- «Technical Instructions for the Safe Transport of Dangerous Goods»
- «Classification and code of dangerous goods»
- «Occupational Safety and Health Act» (OSHA)
- «Toxic Substances Control Act» (TSCA)
- «Consumer Product Safety Act» (CPSA)
- «Federal Environmental Pollution Control Act» (FEPCA)
- «The Oil Pollution Act» (OPA)
- «Superfund Amendments and Reauthorization Act Title III (302/311/312/313)» (SARA)
- «Resource Conservation and Recovery Act» (RCRA)
- «Safety Drinking Water Act» (CWA)
- «California Proposition 65»
- «Code of Federal Regulations» (CFR)

In accordance with all Federal, State and Local laws.

### 16. Additional information

Other Information: The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.