

## Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

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

#### 1.1 Product identifier

### Nickel Metal Hydride Batteries - all sizes

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

##### Relevant identified uses of the substance or mixture:

See definition of the substance or mixture.

##### Uses advised against:

No information available at present.

#### 1.3 Details of the supplier of the safety data sheet

Wentronic GmbH  
 Pillmannstraße 12  
 38112 Braunschweig  
 Tel.: +49 (0)531 2 10 58 - 0  
 Fax: +49 (0)531 2 10 58 - 743  
 Homepage: www.wentronic.com

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

#### 1.4 Emergency telephone number

##### Emergency information services / official advisory body:

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##### Telephone number of the company in case of emergencies:

+49 (0) 700 / 24 112 112 (WEC)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification according to Regulation (EC) 1272/2008 (CLP)

This is an article.

#### 2.2 Label elements

##### Labeling according to Regulation (EC) 1272/2008 (CLP)

This is an article.

Not applicable

#### 2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

Risk of exposure only exists if the battery is handled incorrectly, either mechanically or electrically.

### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

n.a.

#### 3.2 Mixtures

##### Nickel powder

Registration number (REACH)

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<b>Index</b>	028-002-01-4
<b>EINECS, ELINCS, NLP</b>	231-111-4
<b>CAS</b>	7440-02-0
<b>content %</b>	25-<50
<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	Carc. 2, H351 STOT RE 1, H372 Skin Sens. 1, H317 Aquatic Chronic 3, H412

<b>Nickel dihydroxide</b>	
<b>Registration number (REACH)</b>	---
<b>Index</b>	028-008-00-X
<b>EINECS, ELINCS, NLP</b>	235-008-5
<b>CAS</b>	12054-48-7
<b>content %</b>	25-<50
<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	Acute Tox. 4, H302 Skin Irrit. 2, H315 Skin Sens. 1, H317 Acute Tox. 4, H332 Resp. Sens. 1, H334 Muta. 2, H341 Carc. 1A, H350i Repr. 1B, H360D STOT RE 1, H372 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)

<b>Cobalt</b>	
<b>Registration number (REACH)</b>	---
<b>Index</b>	027-001-00-9
<b>EINECS, ELINCS, NLP</b>	231-158-0
<b>CAS</b>	7440-48-4
<b>content %</b>	5-<10
<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	Resp. Sens. 1, H334 Skin Sens. 1, H317 Aquatic Chronic 4, H413 Muta. 2, H341 Carc. 1B, H350 Repr. 1B, H360F

<b>Manganese</b>	<b>Substance for which an EU exposure limit value applies.</b>
<b>Registration number (REACH)</b>	---
<b>Index</b>	---
<b>EINECS, ELINCS, NLP</b>	231-105-1
<b>CAS</b>	7439-96-5
<b>content %</b>	3-<5
<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	Flam. Sol. 2, H228

<b>Potassium hydroxide</b>	
<b>Registration number (REACH)</b>	---
<b>Index</b>	019-002-00-8
<b>EINECS, ELINCS, NLP</b>	215-181-3
<b>CAS</b>	1310-58-3
<b>content %</b>	1-<2,5
<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	Skin Corr. 1A, H314 Acute Tox. 4, H302 Met. Corr. 1, H290 Eye Dam. 1, H318

<b>Sodium hydroxide</b>	
<b>Registration number (REACH)</b>	---
<b>Index</b>	011-002-00-6
<b>EINECS, ELINCS, NLP</b>	215-185-5
<b>CAS</b>	1310-73-2
<b>content %</b>	0,5-<2

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 Nickel Metal Hydride Batteries - all sizes

**Classification according to Regulation (EC) 1272/2008 (CLP)**

Skin Corr. 1A, H314  
 Met. Corr. 1, H290  
 Eye Dam. 1, H318

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.  
 The substances named in this section are given with their actual, appropriate classification!  
 For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

## SECTION 4: First aid measures

This information is only of relevance if a battery is destroyed and this results in direct contact with the ingredients.

### 4.1 Description of first aid measures

First-aiders should ensure they are protected!  
 Never pour anything into the mouth of an unconscious person!

#### Inhalation

Supply person with fresh air and consult doctor according to symptoms.

#### Skin contact

Wash thoroughly using copious water - remove contaminated clothing immediately. If skin irritation occurs (redness etc.), consult doctor.

#### Eye contact

Remove contact lenses.  
 Wash thoroughly for several minutes using copious water.

#### Ingestion

Rinse the mouth thoroughly with water.  
 Give copious water to drink - consult doctor immediately.

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

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.  
 In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

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

Symptomatic treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

CO<sub>2</sub>  
 Extinction powder  
 Sand  
 Water

#### Unsuitable extinguishing media

High volume water jet

### 5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:

Metal oxides  
 Nickel oxides  
 Toxic gases  
 Danger of bursting (explosion) when heated

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.  
 Protective respirator with independent air supply.  
 According to size of fire  
 Full protection, if necessary.  
 Cool container at risk with water.  
 Dispose of contaminated extinction water according to official regulations.

## SECTION 6: Accidental release measures

This information is only of relevance if a battery is destroyed and this results in the ingredients being released into the environment.

### 6.1 Personal precautions, protective equipment and emergency procedures

Ensure sufficient supply of air.  
 Avoid inhalation, and contact with eyes or skin.

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Nickel Metal Hydride Batteries - all sizes

## 6.2 Environmental precautions

Prevent from entering drainage system.

Prevent surface and ground-water infiltration, as well as ground penetration.

## 6.3 Methods and material for containment and cleaning up

Pick up mechanically and dispose of according to Section 13.

Leaked electrolyte fluid:

Wipe up with an absorbent material (e.g. rag, fleece).

## 6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

# SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

## 7.1 Precautions for safe handling

### 7.1.1 General recommendations

Keep away from heat.

Protect from humidity.

Effectively prevent a short circuit of the battery poles.

Do not use any unauthorised chargers or charging methods.

Do not open, dismantle or drop from a great height.

Observe directions on label and instructions for use.

### 7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

## 7.2 Conditions for safe storage, including any incompatibilities

Not to be stored in gangways or stair wells.

Store product closed and only in original packing.

Protect from direct sunlight and warming.

Avoid temperature variations.

Store in a dry place.

Store cool.

## 7.3 Specific end use(s)

No information available at present.

# SECTION 8: Exposure controls/personal protection

## 8.1 Control parameters

Materials are integrated into the product and should not lead to any exposure under normal handling conditions.

Chemical Name	Nickel powder	Content %:25- <50
WEL-TWA: 0,5 mg/m3	WEL-STEL: ---	---
Monitoring procedures:	ISO 15202 (Workplace air - Determination of metals and metalloids in airborne particulate matter by Inductively Coupled Plasma Atomic Emission Spectrometry), Part 1-3 - 2012(Part 1), 2012(Part 2), 2004 (Part 3) - EU project BC/CEN/ENTR/000/2002-16 card 76-1 (2004) - IFA 7808 (Metalle (Arsen, Beryllium, Cadmium, Cobalt, Nickel) und ihre Verbindungen (ICP-Massenspektrometrie)) - 2013 - MDHS 91/2 (Metals and metalloids in workplace air by X-ray fluorescence spectrometry) - 2015 - EU project BC/CEN/ENTR/000/2002-16 card 76-3 (2004) - NIOSH 7300 (ELEMENTS by ICP (Nitric/Perchloric Acid Ashing)) - 2003 - NIOSH 7301 (Elements by ICP (aqua regia ashing)) - 2003 - NIOSH 7303 (Elements by ICP (Hot block HCl/HNO3 digestion)) - 2003 - OSHA 1006 (Arsenic, Cadmium, Cobalt, Copper, Lead, and Nickel) - 2005 - OSHA ID-121 (Metal and metalloid particulates in workplace atmospheres (Atomic absorption)) - 2002 - OSHA ID-125G (Metal and metalloid particulates in workplace atmospheres (ICP)) - 2002	
BMGV: ---	Other information: Sk	
Chemical Name	Cobalt	Content %:5- <10

WEL-TWA: 0,1 mg/m3	WEL-STEL: ---	---
Monitoring procedures:	ISO 15202 (Workplace air - Determination of metals and metalloids in airborne particulate matter by Inductively Coupled Plasma Atomic Emission Spectrometry), Part 1-3 - 2012(Part 1), 2012(Part 2), 2004 (Part 3) - EU project BC/CEN/ENTR/000/2002-16 card 83-1 (2004) - IFA 7808 (Metalle (Arsen, Beryllium, Cadmium, Cobalt, Nickel) und ihre Verbindungen (ICP-Massenspektrometrie)) - 2013 - MDHS 91/2 (Metals and metalloids in workplace air by X-ray fluorescence spectrometry) - 2015 - EU project BC/CEN/ENTR/000/2002-16 card 83-3 (2004) - NIOSH 7027 (Cobalt and compounds, as Co) - 1994 - NIOSH 7300 (ELEMENTS by ICP (Nitric/Perchloric Acid Ashing)) - 2003 - NIOSH 7301 (Elements by ICP (aqua regia ashing)) - 2003 - NIOSH 7303 (Elements by ICP (Hot block HCl/HNO3 digestion)) - 2003 - OSHA ID-121 (Metal and metalloid particulates in workplace atmospheres (Atomic absorption)) - 2002 - OSHA ID-125G (Metal and metalloid particulates in workplace atmospheres (ICP)) - 2002 - OSHA ID-213 (Tungsten and cobalt in workplace atmospheres (ICP analysis)) - 1994	
BMGV: ---	Other information: ---	

Chemical Name	Manganese	Content %:3-5
WEL-TWA: 0,05 mg/m3 (9), 0,2 mg/m3 (8) (EU) (Mn and its inorganic compounds (as Mn)) (WEL, EU)	WEL-STEL: ---	---
Monitoring procedures:	ISO 15202 (Workplace air - Determination of metals and metalloids in airborne particulate matter by Inductively Coupled Plasma Atomic Emission Spectrometry), Part 1-3 - 2012(Part 1), 2012(Part 2), 2004 (Part 3) - EU project BC/CEN/ENTR/000/2002-16 card 74-1 (2004) - MDHS 91/2 (Metals and metalloids in workplace air by X-ray fluorescence spectrometry) - 2015 - EU project BC/CEN/ENTR/000/2002-16 card 74-2 (2004) - NIOSH 7300 (ELEMENTS by ICP (Nitric/Perchloric Acid Ashing)) - 2003 - NIOSH 7301 (Elements by ICP (aqua regia ashing)) - 2003 - NIOSH 7303 (Elements by ICP (Hot block HCl/HNO3 digestion)) - 2003 - OSHA ID-121 (Metal and metalloid particulates in workplace atmospheres (Atomic absorption)) - 2002 - EU project BC/CEN/ENTR/000/2002-16 card 74-8 (2004) - OSHA ID-125G (Metal and metalloid particulates in workplace atmospheres (ICP)) - 2002 - OSHA PV2121 (Gravimetric Determination) - 2003	
BMGV: ---	Other information: ---	

Chemical Name	Potassium hydroxide	Content %:1-2,5
WEL-TWA: ---	WEL-STEL: 2 mg/m3	---
Monitoring procedures:	ISO 15202 (Workplace air - Determination of metals and metalloids in airborne particulate matter by Inductively Coupled Plasma Atomic Emission Spectrometry), Part 1-3 - 2012(Part 1), 2012(Part 2), 2004 (Part 3) - NIOSH 7401 (Alkaline dusts) - 1994 - OSHA ID-121 (Metal and metalloid particulates in workplace atmospheres (Atomic absorption)) - 2002 - EU project BC/CEN/ENTR/000/2002-16 card 44-5 (2004)	
BMGV: ---	Other information: ---	

Chemical Name	Sodium hydroxide	Content %:0,5-2
WEL-TWA: ---	WEL-STEL: 2 mg/m3	---
Monitoring procedures:	ISO 15202 (Workplace air - Determination of metals and metalloids in airborne particulate matter by Inductively Coupled Plasma Atomic Emission Spectrometry), Part 1-3 - 2012(Part 1), 2012(Part 2), 2004 (Part 3) - NIOSH 7401 (Alkaline dusts) - 1994 - OSHA ID-121 (Metal and metalloid particulates in workplace atmospheres (Atomic absorption)) - 2002 - EU project BC/CEN/ENTR/000/2002-16 card 45-5 (2004)	
BMGV: ---	Other information: ---	

Chemical Name	Nickel compounds, inorganic, water-insoluble	Content %:
WEL-TWA: 0,5 mg/m3 (inorganic water-insoluble nickel comp., as Ni)	WEL-STEL: ---	---

Monitoring procedures: ---	
BMGV: ---	Other information: Sk (inorganic water-insoluble nickel comp., as Ni), Carc (nickel oxides)

Nickel powder						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	3,55	µg/l	
	Environment - marine		PNEC	8,6	µg/l	
	Environment - sediment		PNEC	29,9	mg/kg	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,02	mg/kg bw/day	
Consumer	Human - oral	Short term, systemic effects	DNEL	0,012	mg/kg bw/day	
Consumer	Human - inhalation	Long term, local effects	DNEL	0,00002	mg/m3	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	0,00002	mg/m3	
Consumer	Human - inhalation	Short term, local effects	DNEL	2,4	mg/m3	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	4	mg/m3	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	680	mg/m3	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	0,05	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	0,05	mg/m3	
Workers / employees	Human - dermal	Long term, local effects	DNEL	0,07	mg/cm2	

Potassium hydroxide						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
Consumer	Human - inhalation	Long term, local effects	DNEL	1	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	1	mg/m3	

Sodium hydroxide						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
Consumer	Human - inhalation	Long term, local effects	DNEL	1	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	1	mg/m3	

WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period)  
 EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).  
 (8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).  
 (8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.  
 \*\* = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.  
 (13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance

can cause sensitisation of the skin (Directive 2004/37/CE).

## 8.2 Exposure controls

### 8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.

If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.

Applies only if maximum permissible exposure values are listed here.

Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.

These are specified by e.g. EN 14042.

EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

### 8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:

Normally not necessary.

Leaked electrolyte fluid:

Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:

Normally not necessary.

Leaked electrolyte fluid:

If applicable

Protective nitrile gloves (EN 374).

Minimum layer thickness in mm:

$\geq 0,12$

Permeation time (penetration time) in minutes:

$\geq 60$

The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.

The recommended maximum wearing time is 50% of breakthrough time.

Skin protection - Other:

Normally not necessary.

Respiratory protection:

Normally not necessary.

Thermal hazards:

Not applicable

Additional information on hand protection - No tests have been performed.

In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.

Selection of materials derived from glove manufacturer's indications.

Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.

Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.

In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.

The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

### 8.2.3 Environmental exposure controls

No information available at present.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state:

Solid

Colour:

According to specification

Odour:

Odourless

Odour threshold:

Not determined

pH-value:

Mixture reacts with water.

Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	Not determined
Flash point:	n.a.
Evaporation rate:	Not determined
Flammability (solid, gas):	Not determined
Lower explosive limit:	Not determined
Upper explosive limit:	Not determined
Vapour pressure:	Not determined
Vapour density (air = 1):	Not determined
Density:	Not determined
Bulk density:	Not determined
Solubility(ies):	Not determined
Water solubility:	reacts with water
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	No
Decomposition temperature:	Not determined
Viscosity:	n.a.
Explosive properties:	Product is not explosive.
Oxidising properties:	Not determined
<b>9.2 Other information</b>	
Miscibility:	Not determined
Fat solubility / solvent:	Not determined
Conductivity:	Not determined
Surface tension:	Not determined
Solvents content:	Not determined

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The product has not been tested.

### 10.2 Chemical stability

Stable with proper storage and handling.

### 10.3 Possibility of hazardous reactions

No dangerous reactions are known.

### 10.4 Conditions to avoid

See also section 7.

Heating

Moisture

### 10.5 Incompatible materials

See also section 7.

Oxidizing agents

Acids

### 10.6 Hazardous decomposition products

See also section 5.2

No decomposition when used as directed.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Possibly more information on health effects, see Section 2.1 (classification).

#### Nickel Metal Hydride Batteries - all sizes

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:						n.d.a.
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.



Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.

Nickel powder						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>9000	mg/kg	Rat		
Acute toxicity, by inhalation:	NOAC	10,2	mg/l			
Skin corrosion/irritation:					OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:					OECD 405 (Acute Eye Irritation/Corrosion)	Not irritant
Respiratory or skin sensitisation:				Human being		Sensitising (skin contact)
Carcinogenicity:						Limited evidence of a carcinogenic effect.
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:						Target organ(s): respiratory organs

Cobalt						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	6170	mg/kg	Rat		
Respiratory or skin sensitisation:						Sensitising (inhalation and skin contact)
Symptoms:						ataxia, breathing difficulties, diarrhoea, headaches, gastrointestinal disturbances, nausea and vomiting.

Potassium hydroxide						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	333-388	mg/kg	Rat	OECD 425 (Acute Oral Toxicity - Up-and-Down Procedure)	1 week observation
Skin corrosion/irritation:						Skin Corr. 1A
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Corrosive

Sodium hydroxide						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by dermal route:	LD50	>2500	mg/kg	Rabbit	Regulation (EC) 440/2008 B.3 (ACUTE TOXICITY (DERMAL))	
Skin corrosion/irritation:				Rabbit		Skin Corr. 1A
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Dam. 1
Respiratory or skin sensitisation:				Human being	(Patch-Test)	Not sensitizing

Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
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## SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

Nickel Metal Hydride Batteries - all sizes							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and degradability:							n.d.a.
12.3. Bioaccumulative potential:							n.d.a.
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT and vPvB assessment							n.d.a.
12.6. Other adverse effects:							n.d.a.

Nickel powder							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	0,4	mg/l	Pimephales promelas		
12.1. Toxicity to fish:	NOEC/NOEL	28d	40	µg/l	Brachydanio rerio		
12.1. Toxicity to daphnia:	NOEC/NOEL	28d	1,4	µg/l			Lymnaea stagnalis
12.1. Toxicity to daphnia:	EC50	48h	0,013	mg/l	Ceriodaphnia spec.	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	NOEC/NOEL	28d	12,4	µg/l			Scenedesmus accuminatus
12.3. Bioaccumulative potential:	BCF		270				
12.4. Mobility in soil:							Slight
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

Cobalt							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	>100	mg/l	Brachydanio rerio		
12.1. Toxicity to daphnia:	NOEC/NOEL	48h	3,2	mg/l	Daphnia magna		

Potassium hydroxide							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	80	mg/l	Gambusia affinis		
12.1. Toxicity to fish:	LC50	24h	165	mg/l	Poecilia reticulata		
12.2. Persistence and degradability:							Not relevant for inorganic substances.
12.3. Bioaccumulative potential:							Not to be expected
Toxicity to bacteria:	EC50	15min	22	mg/l	Photobacterium phosphoreum		

Sodium hydroxide							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes

12.1. Toxicity to fish:	LC50	96h	45,4	mg/l	Oncorhynchus mykiss		
12.1. Toxicity to fish:	LC50	96h	125	mg/l	Gambusia affinis		
12.1. Toxicity to daphnia:	EC50	48h	40,4	mg/l	Ceriodaphnia spec.		
12.2. Persistence and degradability:							Not relevant for inorganic substances.
12.3. Bioaccumulative potential:	Log Kow		-3,88				Negative
Toxicity to bacteria:	EC50	15min	22	mg/l	Photobacterium phosphoreum		

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### For the substance / mixture / residual amounts

EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product.

Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)

16 06 05 other batteries and accumulators

16 06 06 separately collected electrolyte from batteries and accumulators

20 01 34 batteries and accumulators other than those mentioned in 20 01 33

Recommendation:

Sewage disposal shall be discouraged.

Pay attention to local and national official regulations.

Implement substance recycling.

Do not dispose of with household waste.

#### For contaminated packing material

Pay attention to local and national official regulations.

Recommendation:

Recycling

## SECTION 14: Transport information

### General statements

14.1. UN number: 3496

#### Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name:  
UN 3496 NO SUBJECT TO ADR

14.3. Transport hazard class(es):

14.4. Packing group: n.a.

Classification code: n.a.

LQ: n.a.

14.5. Environmental hazards: Not applicable

Tunnel restriction code:

#### Transport by sea (IMDG-code)

14.2. UN proper shipping name:  
BATTERIES, NICKEL-METAL HYDRIDE

14.3. Transport hazard class(es):

14.4. Packing group: 9\_Batterien

EmS: n.a.

Marine Pollutant: F-A, S-I

14.5. Environmental hazards: n.a.

#### Transport by air (IATA)

14.2. UN proper shipping name:

Batteries, nickel-metal hydride

14.3. Transport hazard class(es):

14.4. Packing group: 9\_Batterien

14.5. Environmental hazards: n.a.

Not applicable

#### 14.6. Special precautions for user

Persons employed in transporting dangerous goods must be trained.



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 Nickel Metal Hydride Batteries - all sizes

All persons involved in transporting must observe safety regulations.  
 Precautions must be taken to prevent damage.

#### **14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code**

Freighted as packaged goods rather than in bulk, therefore not applicable.  
 Minimum amount regulations have not been taken into account.  
 Danger code and packing code on request.  
 Comply with special provisions.

### **SECTION 15: Regulatory information**

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

Observe restrictions:  
 Regulation (EC) No 1907/2006, Annex XVII  
 Nickel powder  
 Nickel dihydroxide  
 Cobalt  
 General hygiene measures for the handling of chemicals are applicable.

Directive 2010/75/EU (VOC): 0 %

#### **15.2 Chemical safety assessment**

A chemical safety assessment is not provided for mixtures.

### **SECTION 16: Other information**

Revised sections: n.a.  
 Employee training in handling dangerous goods is required.

#### **Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):**

Not applicable

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

H314 Causes severe skin burns and eye damage.  
 H360F May damage fertility.  
 H360D May damage the unborn child.  
 H350i May cause cancer by inhalation.  
 H290 May be corrosive to metals.  
 H302 Harmful if swallowed.  
 H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H318 Causes serious eye damage.  
 H332 Harmful if inhaled.  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H341 Suspected of causing genetic defects.  
 H351 Suspected of causing cancer.  
 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.  
 H412 Harmful to aquatic life with long lasting effects.  
 H413 May cause long lasting harmful effects to aquatic life.  
 H228 Flammable solid.

Carc. — Carcinogenicity  
 STOT RE — Specific target organ toxicity - repeated exposure  
 Skin Sens. — Skin sensitization  
 Aquatic Chronic — Hazardous to the aquatic environment - chronic  
 Acute Tox. — Acute toxicity - oral  
 Skin Irrit. — Skin irritation  
 Acute Tox. — Acute toxicity - inhalation  
 Resp. Sens. — Respiratory sensitization  
 Muta. — Germ cell mutagenicity  
 Repr. — Reproductive toxicity

Aquatic Acute — Hazardous to the aquatic environment - acute

Flam. Sol. — Flammable solid

Skin Corr. — Skin corrosion

Met. Corr. — Substance or mixture corrosive to metals

Eye Dam. — Serious eye damage

### Any abbreviations and acronyms used in this document:

acc., acc. to according, according to

ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)

AOX Adsorbable organic halogen compounds

approx. approximately

Art., Art. no. Article number

ASTM ASTM International (American Society for Testing and Materials)

ATE Acute Toxicity Estimate

BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)

BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)

BSEF The International Bromine Council

bw body weight

CAS Chemical Abstracts Service

CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)

CMR carcinogenic, mutagenic, reproductive toxic

DMEL Derived Minimum Effect Level

DNEL Derived No Effect Level

dw dry weight

e.g. for example (abbreviation of Latin 'exempli gratia'), for instance

EC European Community

ECHA European Chemicals Agency

EEC European Economic Community

EINECS European Inventory of Existing Commercial Chemical Substances

ELINCS European List of Notified Chemical Substances

EN European Norms

EPA United States Environmental Protection Agency (United States of America)

etc. et cetera

EU European Union

EVAL Ethylene-vinyl alcohol copolymer

Fax. Fax number

gen. general

GHS Globally Harmonized System of Classification and Labelling of Chemicals

GWP Global warming potential

IARC International Agency for Research on Cancer

IATA International Air Transport Association

IBC (Code) International Bulk Chemical (Code)

IMDG-code International Maritime Code for Dangerous Goods

incl. including, inclusive

IUCLID International Uniform Chemical Information Database

IUPAC International Union for Pure Applied Chemistry

LC50 Lethal Concentration to 50 % of a test population

LD50 Lethal Dose to 50% of a test population (Median Lethal Dose)

LQ Limited Quantities

MARPOL International Convention for the Prevention of Marine Pollution from Ships

n.a. not applicable

n.av. not available

n.c. not checked

n.d.a. no data available

OECD Organisation for Economic Co-operation and Development

org. organic

PBT persistent, bioaccumulative and toxic

PE Polyethylene

PNEC Predicted No Effect Concentration

ppm parts per million

PVC Polyvinylchloride

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REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)

REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.

RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)

SVHC Substances of Very High Concern

Tel. Telephone

UN RTDG United Nations Recommendations on the Transport of Dangerous Goods

VOC Volatile organic compounds

vPvB very persistent and very bioaccumulative

wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.

No responsibility.

These statements were made by:

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