

# SAFETY DATA SHEET

## NICKEL HYDROXIDE



The safety data sheet is in accordance with Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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

Date issued 15.06.2017

#### 1.1. Product identifier

Product name NICKEL HYDROXIDE  
REACH Reg. No. 01-2119472435-36-0002  
CAS no. 12054-48-7  
EC no. 235-008-5  
Extended SDS with ES incorporated Yes

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

Use of the substance/preparation Battery manufacturing; Pigments; Plating agent;  
Uses advised against Not known.

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

##### Manufacturer

Company name Norilsk Nickel Harjavalta Oy  
Postal address Teollisuuskatu 1  
Postcode 29200  
City Harjavalta  
Country Finland  
Tel +358 2 537 11  
E-mail [product.safety@nornickel.fi](mailto:product.safety@nornickel.fi)  
Enterprise no. F115917284

#### 1.4. Emergency telephone number

Emergency telephone Description: 3E EH&S Mission Control Center: +44 20 35147487 / Access Code: 334656

### SECTION 2: Hazards identification

#### 2.1. Classification of substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	Skin Irrit. 2; H315
	Skin Sens. 1; H317
	Muta. 2; H341
	Acute tox. 4; H302
	Acute tox. 4; H332
	STOT RE1; H372
	Repr. 1B; H360D
	Carc. 1A; H350i
	Resp. Sens. 1; H334
	Aquatic Acute 1; H400
	Aquatic Chronic 1; H410

## 2.2. Label elements

### Hazard Pictograms (CLP)



Signal word	Danger
Hazard statements	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H341 Suspected of causing genetic defects H302 Harmful if swallowed. H332 Harmful if inhaled. H372 Causes damage to organs through prolonged or repeated exposure H360D May damage the unborn child. H350i May cause cancer by inhalation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H410 Very toxic to aquatic life with long lasting effects.
Precautionary statements	P261 Avoid breathing dust / fume / gas / mist / vapours / spray. P363 Wash contaminated clothing before reuse. P270 Do not eat, drink or smoke when using this product. P309+P311 IF exposed or if you feel unwell: Call a POISON CENTER or doctor / physician. P273 Avoid release to the environment. P280 Wear protective gloves / protective clothing / eye protection / face protection. P261 Avoid breathing .

## 2.3. Other hazards

PBT / vPvB	The PBT and vPvB criteria of Annex XIII to the regulation does not apply to inorganic substances.
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## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance	Identification	Classification	Contents
Nickel dihydroxide	CAS no.: 12054-48-7	Carc. 1A; H350i	100 %

EC no.: 235-008-5	Repr. 1B; H360D
REACH Reg. No.: 01-2119472435-36-0002	Muta. 2; H341
	STOT RE1; H372
	Acute tox. 4; H302
	Acute tox. 4; H332
	Skin Irrit. 2; H315
	Resp. Sens. 1; H334
	Skin Sens. 1; H317
	Aquatic Acute 1; H400; M-factor 1
	Aquatic Chronic 1; M-factor 1

Substance comments      Substance, inorganic salt

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

General	If symptoms persist, call a physician.
Inhalation	Remove affected person from the immediate area. Ensure supply of fresh air. If breathing is irregular or stopped, administer artificial respiration. Consult a physician.
Skin contact	Wash off with soap and plenty of water. Remove soiled or soaked clothing immediately. Wash contaminated clothing before re-use.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.
Ingestion	Rinse mouth. Consult a physician.

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

General symptoms and effects      Treat Symptomatically.

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

Medical treatment      No hazards which require special first aid measures.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment e.g.: Dry powder; Carbon dioxide (CO <sub>2</sub> ); Water spray jet;
Improper extinguishing media	Strong water jet;

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

Fire and explosion hazards      In the event of fire the following can be released: Metal dust; Metallic oxides;

### 5.3. Advice for firefighters

Personal protective equipment	Wear self-contained breathing apparatus and protective suit.
Other Information	Collect contaminated fire extinguishing water separately. Do not discharge into the drains/surface waters/groundwater.

## SECTION 6: Accidental release measures

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

General measures Refer to protective measures listed in sections 7 and 8. Avoid contact with skin, eyes and clothing. Avoid dust formation. Ensure adequate ventilation.

## 6.2. Environmental precautions

Environmental precautionary measures Do not discharge into the drains/surface waters/groundwater. Avoid dust formation.

## 6.3. Methods and material for containment and cleaning up

Other information Pick up mechanically. Send in suitable containers for recovery or disposal. (Section 13)

## 6.4. Reference to other sections

Other instructions See also section 8,13

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Handling 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.  
Avoid inhalation of dust and contact with skin and eyes. Use mechanical ventilation in case of handling which causes formation of dust. Avoid generating excess dust.

### Protective Safety Measures

Advice on general occupational hygiene Private clothes and working clothes should be kept separately.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage Store in tightly closed original container in a dry and cool place.  
Conditions to avoid Acids

### 7.3. Specific end use(s)

Specific use(s) Exposure scenario is attached. Generic exposure scenario available from:  
<http://www.nickelconsortia.org/exposure-scenario-library.html>

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Substance	Identification	Value	TWA Year
Nickel compounds *		TWA (8h): 0,05 mg/m <sup>3</sup> Source: HTP Finland TWA (8h): 0,01 mg/m <sup>3</sup> Source: HTP Finland Comments: Alveolar dust fraction	TWA Year: 2013

### DNEL / PNEC

Substance Nickel dihydroxide  
DNEL  
**Group:** Professional  
**Route of exposure:** Acute inhalation (systemic)  
**Value:** 1403 mg/m<sup>3</sup>  
**Remarks:** Ni

**Group:** Professional  
**Route of exposure:** Acute inhalation (local)  
**Value:** 18,9 mg/m<sup>3</sup>  
**Remarks:** Ni

**Group:** Professional  
**Route of exposure:** Long-term inhalation (systemic)  
**Value:** 0,05 mg/m<sup>3</sup>  
**Remarks:** Ni

**Group:** Professional  
**Route of exposure:** Long-term dermal (local)  
**Value:** 0,65  
**Remarks:** mg Ni/cm<sup>2</sup>

**Group:** Professional  
**Route of exposure:** Long-term inhalation (local)  
**Value:** 0.05 mg/m<sup>3</sup>  
**Remarks:** Ni

PNEC

**Comment :** PNEC marine water: 8.6 µg dissolved Ni/L

**Comment :** PNEC Freshwater: 7.1 µg dissolved Ni/L

**Comment :** PNEC Sediment: 109 mg Ni/kg dry wt.

## 8.2. Exposure controls

### Precautionary measures to prevent exposure

Product-related measures to prevent exposure

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. Avoid contact with skin and eyes. Do not breathe dust. Avoid repeated exposure. Wear suitable protective equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Remove soiled or soaked clothing immediately. Clean skin thoroughly after work. At work do not eat, drink, smoke or take drugs. Keep away from food, drink and animal feedingstuffs. Keep working clothes separately.

### Eye / face protection

Suitable Eye Protection

Use eye protection. Wear full-face visor or shield.

### Hand protection

Suitable gloves type

Wear protective gloves.

Suitable materials

Butyl rubber. Neoprene. Polyvinyl chloride (PVC).

### Skin protection

Suitable protective clothing

Wear appropriate clothing to prevent reasonably probable skin contact. Wear special protective clothing.

### Respiratory protection

Recommended type of equipment

Use respiratory equipment with particle filter, type P3.

### Appropriate environmental exposure control

Environmental exposure controls	The employer shall fulfill requirements of IPPC Directive.
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## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	Appearance: Crystalline Colour: Light green
Odour	odourless
Odour limit	Comments: Not relevant.
Melting point / melting range	Comments: 200°C Decomposes before melting.
Boiling point / boiling range	Comments: Decomposes before melting.
Flammability (solid, gas)	does not ignite
Vapour pressure	Comments: Not applicable.
Vapour density	Comments: Not applicable.
Density	Value: 0,55 g/cm <sup>3</sup>
Spontaneous combustability	Comments: >400°C
Decomposition temperature	Comments: 200°C
Explosive properties	Not explosive
Oxidising properties	no oxidizing

### 9.2. Other information

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reactivity	No dangerous reaction known under conditions of normal use.
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### 10.2. Chemical stability

Stability	Stable under recommended storage conditions.
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### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
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### 10.4. Conditions to avoid

Conditions to avoid	Avoid dust formation.
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### 10.5. Incompatible materials

Materials to avoid	Acids;
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### 10.6. Hazardous decomposition products

Hazardous decomposition products	Metallic oxides;
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### Other information

## SECTION 11: Toxicological information

## 11.1. Information on toxicological effects

Acute toxicity	Value:
Substance	Nickel dihydroxide
Acute toxicity	<b>Type of toxicity:</b> Acute <b>Effect Tested:</b> LD50 <b>Route of exposure:</b> Oral <b>Value:</b> 5000 mg/kg  <b>Effect Tested:</b> NOAEL <b>Route of exposure:</b> Inhalation. <b>Comments:</b> 3,900 mg Ni/m <sup>3</sup>  <b>Effect Tested:</b> NOAEL <b>Route of exposure:</b> Oral <b>Comments:</b> 430 mg Ni/kg bw

## Other information regarding health hazards

Assessment of acute toxicity classification	Harmful if inhaled. Harmful if swallowed. (CLP ATP 1)
Assessment of skin corrosion / irritation, classification	According to the classification criteria of the European Union, the product is not considered as being an eye irritant. Skin irrit. 2 Irritating to skin. (CLP ATP 1)
General respiratory or skin sensitisation	Skin sens.1 H317 – May cause an allergic skin reaction. Resp sens. 1 H334 – May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Assessment carcinogenicity classification	Carc. 1A May cause cancer by inhalation. Repr. 1B May damage the unborn child. Muta 2 Suspected of causing genetic defects <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.
Assessment specific target organ SE, classification	STOT RE 1 Causes damage to organs [Value] through prolonged or repeated exposure [Value]. LOAEC =0,5 mg Ni/m <sup>3</sup> Target Organs Lungs If inhaled
Aspiration hazard, comments	Not relevant.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecotoxicity	Aquatic Acute 1 Aquatic Chronic 1 Ecotoxicity Reference Value (ERV) Nickel compounds -acute 120 µg Ni/L (pH 6), 68 µg Ni/L (pH 8) -chronic = 2.4 µg Ni/L
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### 12.2. Persistence and degradability

Persistence and degradability	Not Applicable – Inorganic chemical.
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### 12.3. Bioaccumulative potential

Bioaccumulative potential	Bioconcentration factor (BCF) Bioconcentration Terrestrial Compartment BSAF 0.013-1.86
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### 12.4. Mobility in soil

Mobility	Kp-Soil: log Kpsoil 2.86
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## 12.5. Results of PBT and vPvB assessment

PBT assessment results      The PBT and vPvB criteria of Annex XIII to the regulation does not apply to inorganic substances.

## 12.6. Other adverse effects

Other adverse effects /      No studies have been found.  
Remarks

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Specify the appropriate      Recover and reclaim or recycle, if practical. Treat the disposal of solids as hazardous waste.  
methods of disposal  
Other Information      Contact manufacturer. Dispose of as special waste in compliance with local and national regulations.

## SECTION 14: Transport information

### 14.1. UN number

Comments      UN3077

### 14.2. UN proper shipping name

Comments      ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Nickel dihydroxide)

### 14.3. Transport hazard class(es)

Comments      9

### 14.4. Packing group

Comments      III

### 14.5. Environmental hazards

Comments      Environmentally hazardous substance – marine pollutant

### 14.6. Special precautions for user

Special safety precautions for      None. Tunnel restriction code (-)  
user

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport In Bulk Value      No  
(Yes/No)

## SECTION 15: Regulatory information

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


Assessed restrictions      Reach 1907/2006 Annex XVII (27 Nickel and its compounds)  
Legislation and regulations      94/27/EC ; 2007/96/EC

### 15.2. Chemical safety assessment



Chemical safety assessment performed Yes

## SECTION 16: Other information

List of relevant H-phrases (Section 2 and 3).	<p>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.  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.</p>
Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	<p>Skin Irrit. 2; H315  Skin Sens. 1; H317  Muta. 2; H341  Acute tox. 4; H302  Acute tox. 4; H332  STOT RE1; H372  Repr. 1B; H360D  Carc. 1A; H350i  Resp. Sens. 1; H334  Aquatic Acute 1; H400  Aquatic Chronic 1; H410</p>
Additional information	<p>Disclaimer  The information in this document is believed to be correct as of the date issued. However, no warranty of merchantability, fitness for any particular purpose, or any other warranty is expressed or is to be implied regarding the accuracy or completeness of this information, the results to be obtained from the use of this information or the product, the safety of this product, or the hazards related to its use. This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.</p>
Key literature references and sources for data	Chemical Safety Report
Exposure scenario	 <a href="#">ES_0_NICKEL HYDROXIDE [FI-FIN].pdf</a>