

# SAFETY DATA SHEET

## NICKEL POWDER



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 POWDER  
REACH Reg. No. 01-2119438727-29-0001  
CAS no. 7440-02-0  
EC no. 231-111-4  
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 S4A (stainless, special steels and special alloy custers) ;Integrated steel and iron; EAF carbon steel; Powder metallurgy; Metal surface treatment (Nickel electroplating and nickel electroforming technologies); Manufacturing of batteries using positive nickel electrodes; Ni catalyst production from NiO-containing catalyst precursor; Use pre-reduced nickel containing catalyst; Production of magnets ; Production of nickel containing products (e.g. Electronics);Production of brazing alloys; Production of contact materials; Sputter deposition ;Thin film deposition by evaporation techniques  
All identified uses are listed in the attached GES.

Uses advised against Nickel in articles intended for direct and prolonged skin-contact.  
Nickel-containing food contact materials for which migration into foodstuff would exceed more than 0,1 mg/kg of nickel in accordance with the Council of Europe Guidelines on metals and alloys used as food contact materials (2002).  
Nickel-containing HIGH SULPHUR stainless steel for surgical implants.  
Immersion-type kettles which would release more than 0.05 mg/l of nickel into the water in accordance with the Council of Europe Guidelines on metals and alloys used as food contact materials (2002).

#### 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. FI15917284

### 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 Sens. 1; H317  
 STOT RE1; H372  
 Carc. 2; H351  
 Aquatic Chronic 3; H412

### 2.2. Label elements

#### Hazard Pictograms (CLP)



Signal word	Danger
Hazard statements	H317 May cause an allergic skin reaction. H372 Causes damage to organs through prolonged or repeated exposure H351 Suspected of causing cancer H412 Harmful to aquatic life with long lasting effects.
Precautionary statements	P202 Do not handle until all safety precautions have been read and understood. P281 Use personal protective equipment as required. P280 Wear protective gloves / protective clothing / eye protection / face protection. P261 Avoid breathing dust / fume / gas / mist / vapours / spray. P333+P313 If skin irritation or rash occurs: Get medical advice / attention. P273 Avoid release to the environment.

### 2.3. Other hazards

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

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance	Identification	Classification	Contents
Nickel powder (particle diameter <1mm)	CAS no.: 7440-02-0 EC no.: 231-111-4 REACH Reg. No.: 01-2119438727-29-	Skin Sens. 1; H317 STOT RE1; H372 Carc. 2; H351 Aquatic Chronic 3; H412	99,9 %

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

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. Never give anything by mouth to an unconscious person.

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

General symptoms and effects	Treat symptomatically.
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#### 4.3. Indication of any immediate medical attention and special treatment needed

Medical treatment	None.
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### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media	Powder. Water spray. Foam. Carbon dioxide (CO <sub>2</sub> ).
Improper extinguishing media	None.

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

Fire and explosion hazards	In case of fire, toxic gases may be formed. Metal dust; Metallic oxides;
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#### 5.3. Advice for firefighters

Personal protective equipment	Use personal protective equipment as required.
Other Information	Collect contaminated fire extinguishing water separately. Do not discharge into the drains/surface waters/groundwater. Nickel is non-flammable, but very fine nickel particles can burn.

### 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 breathing dust. Avoid dust formation. Avoid release to the environment.
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#### 6.2. Environmental precautions

Environmental precautionary measures	Do not discharge into drains, water courses or onto the ground.
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#### 6.3. Methods and material for containment and cleaning up

Other information	Recover the product and place in a suitable container for reuse.
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#### 6.4. Reference to other sections

Other instructions	See also section 8,13
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### 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.
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## 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.  
Incompatible products  
Oxidiser storage. 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*		TWA (8h): 0,01 mg/m <sup>3</sup> <b>Exposure Limit Letter</b> Letter description: Ni, alveol fraction Source: HTP Finland	TWA Year: 2013

### DNEL / PNEC

PNEC  
Comment : PNEC marine water: 8.6 □g dissolved Ni/L  
Comment : PNEC Freshwater: 7.1 □g dissolved Ni/L  
Comment : PNEC Sediment: 109 mg Ni/kg dry wt.

Substance Nickel powder (particle diameter <1mm)  
DNEL  
**Group:** Professional  
**Route of exposure:** Acute inhalation (local)  
**Value:** 11.9 mg/m<sup>3</sup>  
**Group:** Professional  
**Route of exposure:** Long-term inhalation (systemic)  
**Value:** 0.05 mg/m<sup>3</sup>  
**Group:** Professional  
**Route of exposure:** Long-term dermal (local)  
**Value:** 0.035  
**Remarks:** mg Ni/cm<sup>2</sup>  
**Group:** Professional  
**Route of exposure:** Long-term inhalation (local)  
**Value:** 0.05 mg/m<sup>3</sup>

### 8.2. Exposure controls

#### Precautionary measures to prevent exposure

Product-related measures to prevent exposure Avoid contact with skin and eyes. Do not breathe dust. Avoid repeated exposure.

**Eye / face protection**

Suitable Eye Protection Use eye protection. Wear full-face visor or shield.

**Hand protection**

Suitable gloves type Wear protective gloves. Avoid prolonged skin contact.

Suitable materials Leather. Nitrile.

**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.

**Hygiene / environmental**

Specific hygiene measures Isolate contaminated clothing and wash before reuse. Personal protection must be kept separate from other clothes. When using do not eat, drink or smoke.

**Appropriate environmental exposure control**

Environmental exposure controls The employer shall fulfill requirements of IPPC Directive.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state	Powder
Colour	Silver-grey
Odour	Odourless.
Odour limit	Comments: Not relevant.
pH	Status: In delivery state Comments: Technically not feasible.
Melting point / melting range	Comments: 1455°C
Boiling point / boiling range	Comments: 2730°C
Flash point	Comments: Technically not feasible.
Flammability (solid, gas)	The product is not flammable.
Vapour pressure	Comments: 1 mmHg 1810°C
Specific gravity	Comments: 4-5 g/cm <sup>3</sup>
Partition coefficient: n-octanol/water	Comments: Technically not feasible. inorganic
Spontaneous combustibility	Comments: The product is not flammable.
Viscosity	Comments: Not relevant. Solid
Explosive properties	Not explosive
Oxidising properties	Not oxidizing.

**9.2. Other information**

## Other physical and chemical properties

Physical and chemical properties      Granulometry Manufacturer

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reactivity      No specific reactivity hazards associated with this product.

### 10.2. Chemical stability

Stability      Stable under the prescribed storage conditions.

### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions      No dangerous reaction known under conditions of normal use.

### 10.4. Conditions to avoid

Conditions to avoid      Avoid dust formation.

### 10.5. Incompatible materials

Materials to avoid      Oxidizing agents;  
Reacts with acids to form flammable/explosive hydrogen gases.

### 10.6. Hazardous decomposition products

Hazardous decomposition products      Metallic oxides;

## Other information

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Substance      Nickel powder (particle diameter <1mm)

Acute toxicity      **Type of toxicity:** Acute  
**Effect Tested:** LD50  
**Route of exposure:** Oral  
**Value:** > 9000 mg/kg

**Type of toxicity:** Acute  
**Effect Tested:** LC50  
**Route of exposure:** Inhalation.  
**Value:** > 10 mg/l

**Type of toxicity:** Acute  
**Effect Tested:** NOAEL  
**Value:** 0,012 mg/kg bw /d  
**Comments:** Ni ion released from metallic nickel in water and food contact material

## Other information regarding health hazards

Assessment of skin corrosion / irritation, classification	According to the classification criteria of the European Union, the product is not considered as being a skin irritant. According to the classification criteria of the European Union, the product is not considered as being an eye irritant.
Skin contact	May cause an allergic skin reaction.
Sensitisation	Not classified as Respiratory sensitizer.
Mutagenicity	None.
Carcinogenicity	Suspected of causing cancer if inhaled.
Reproductive toxicity	None.
Assessment specific target organ SE, classification	Causes damage to organs through prolonged or repeated exposure . LOAEC = 0.1 mg Ni/m <sup>3</sup> lungs if inhaled target organs
Aspiration hazard, comments	Not relevant.

## SECTION 12: Ecological information

### 12.1. Toxicity

Substance	Nickel powder (particle diameter <1mm)
Acute aquatic, fish	<p><b>Toxicity type:</b> Acute  <b>Value:</b> 0,4 – 320 mg/l  <b>Effect dose concentration :</b> LC50  <b>Exposure time:</b> 96 Tunti  <b>Test reference:</b> Pimephales promelas; Hoang et al., 2004 Brachydanio rerio; Janssen Pharmaceutica, 1993d</p> <p><b>Toxicity type:</b> Chronic  <b>Value:</b> 10 – 15420 µg/l  <b>Effect dose concentration :</b> EC10  <b>Test reference:</b> Brachydanio rerio(Dave &amp; Xiu, 1991) Brachydanio rerio (Kienle et al., 2009)</p>
Ecotoxicity	<p>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</p>

### 12.2. Persistence and degradability

Persistence and degradability	No data available.
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### 12.3. Bioaccumulative potential

Bioaccumulative potential	Bioconcentration Terrestrial Compartment BSAF 0.013-1.86
Bioconcentration factor (BCF)	Value: 270

### 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.
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### 12.6. Other adverse effects

Other adverse effects / Remarks	Not applicable.
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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Specify the appropriate methods of disposal	The listed waste code numbers, according to the European Waste Catalogue (EWC), are to be understood as a recommendation (2000/532/EC). Dispose of waste and residues in accordance with local authority requirements. Recover and reclaim or recycle, if practical.
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	Not classified as dangerous in the meaning of transport regulations.
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### 14.2. UN proper shipping name

### 14.3. Transport hazard class(es)

### 14.4. Packing group

### 14.5. Environmental hazards

Comments	-
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### 14.6. Special precautions for user

Special safety precautions for user	Not classified as dangerous in the meaning of transport regulations.
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### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport In Bulk Value (Yes/No)	No
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## 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	2004/96/EC

### 15.2. Chemical safety assessment

Chemical safety assessment performed	Yes
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## SECTION 16: Other information

List of relevant H-phrases (Section 2 and 3).	H317 May cause an allergic skin reaction. H351 Suspected of causing cancer H372 Causes damage to organs through prolonged or repeated exposure H412 Harmful to aquatic life with long lasting effects.
Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	Skin Sens. 1; H317 STOT RE1; H372 Carc. 2; H351 Aquatic Chronic 3; H412
Additional information	Disclaimer



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Abbreviations and acronyms used

Ni RA Nikkelin riskinarviointi

Exposure scenario

 [ES\\_0\\_NICKEL POWDER \[FI-FIN\].pdf](#)