### SAFETY DATA SHEET

Nickel



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	12.06.2017
Revision date	26.10.2022

### 1.1. Product identifier

Product name	Nickel
Synonyms	Nickel Electrolytic, Nickel carbonyl
REACH Reg. No., comments	01-2119438727-29-0055
CAS No.	7440-02-0
EC No.	231-111-4
Article no.	NORNICKEL, SEVERONICKEL COMBINE H-1Y, SEVERONICKEL COMBINE H-1, H-2, H-3, H-4, Carbonyl nickel pellets DNK-0, Carbonyl nickel pellets DNK-1, Carbonyl nickel pellets DNK
Extended SDS with ES incorporated	Yes

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

Use of the substance / mixture	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). Use of nickel and nickel compounds in tattoo inks or permanent makeup products.

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

Manufacturer	
Company name	JSC «Kola GMK»
Postal address	KGMK Industrial Site, Monchegorsk
Postcode	184507
City	Murmansk Region
Country	Russian Federation
Telephone number	+7(81536) 7-72-01
Fax	+7(81536) 7-99-86
Email	product.safety@nornickel.fi

### 1.4. Emergency telephone number

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

### **SECTION 2: Hazards identification**

### 2.1. Classification of the substance or mixture

Classification according to	Skin Sens. 1; H317
Regulation (EC) No 1272/2008 [CLP / GHS]	STOT RE 1; H372
	Carc. 2; H351

### 2.2. Label elements

Hazard pictograms (CLP)	
Signal word	Danger
Hazard statements	H317 May cause an allergic skin reaction. H372 Causes damage to organs lungs through prolonged or repeated exposure via inhalation H351 Suspected of causing cancer inhalation
Precautionary statements	P202 Do not handle until all safety precautions have been read and understood. P333+P313 If skin irritation or rash occurs: Get medical advice / attention. P261 Avoid breathing dust / fume / gas / mist / vapours / spray. P273 Avoid release to the environment. P280 Wear protective gloves / protective clothing / eye protection / face protection.
Other label information (CLP)	CLP Article 23 d labelling derogation

#### 2.3. Other hazards

PBT / vPvB

Not Classified as PBT/vPvB by current EU criteria.

### **SECTION 3: Composition / information on ingredients**

### 3.1. Substances

Substance	Identification	Classification	Contents	Notes
Nickel	CAS No.: 7440-02-0	Skin Sens. 1; H317	≥ 96,9 %	
	EC No.: 231-111-4	STOT RE 1; H372		
		Carc. 2; H351		

### **SECTION 4: First aid measures**

#### 4.1. Description of first aid measures

Inhalation	Remove affected person from source of contamination. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. Get medical attention.
Skin contact	Promptly flush contaminated skin with soap or mild detergent and water. Promptly remove clothing if penetrated and flush the skin with water. Remove contaminated clothing and launder thoroughly before re-use.
Eye contact	Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. If eye irritation persists: Get medical advice/ attention.
Ingestion	Rinse mouth with water. Get medical advice/attention. Do not give victim anything to drink if he is unconscious.

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

None.

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

Medical treatment

### **SECTION 5: Firefighting measures**

#### 5.1. Extinguishing media

Suitable extinguishing media	This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials. Foam, carbon dioxide or dry powder. Water spray.
Improper extinguishing media	None.

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

Hazardous combustion products	In case of fire, toxic gases may be formed. Metal oxides. Powdered metal.
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### 5.3. Advice for firefighters

Personal protective equipment Use personal protective equipment as required.

Other information	Nickel is non-flammable, but very fine nickel particles can burn. Avoid discharge into drains, water courses or onto the ground.
<b>SECTION 6: Accidental</b>	release measures
6.1. Personal precautions,	protective equipment and emergency procedures
General measures	For personal protection, see section 8. and 7. Avoid contact with skin and eyes. Provide adequate ventilation.
6.2. Environmental precau	tions
Environmental precautionary measures	Avoid discharge into drains, water courses or onto the ground.
6.3. Methods and material	for containment and cleaning up
Other information	Recover the product and place in a suitable container for reuse. Avoid dust formation.
6.4. Reference to other sec	ctions
Other instructions	See section 8. and 13.
SECTION 7: Handling a	nd storage
7.1. Precautions for safe h	andling
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 measure	S
Advice on general occupational hygiene	Private clothes and working clothes should be kept separately.
7.2. Conditions for safe sto	orage, including any incompatibilities
Storage	Store in tightly closed original container in a dry and cool place. Incompatible products Acids; Oxidising material.
7.3. Specific end use(s)	
Specific use(s)	For further information see attached Exposure Scenario. Generic exposure scenario available from: https://www.nickelconsortia.eu/ exposure-scenario-library.html
SECTION 8: Exposure c	ontrols / personal protection
8.1. Control parameters	

Substance	Identification	Exposure limits	TWA Year
Nickel*		Limit value (8 h) : 0,5	

**Exposure limit letter** Letter code: Sk; Carc; Sen

### **DNEL / PNEC**

Substance	Nickel
DNEL	Group: Professional Route of exposure: Acute inhalation (local) Value: 11.9 mg/m <sup>3</sup> Reference: Ni, inhalable dust
	<b>Group:</b> Professional <b>Route of exposure:</b> Long-term inhalation (systemic) <b>Value:</b> 0.05 mg/m <sup>3</sup> <b>Reference:</b> Ni, inhalable dust
	Group: Professional Route of exposure: Long-term dermal (local) Value: 0.035 Reference: mg Ni/cm2
	<b>Group:</b> Professional <b>Route of exposure:</b> Long-term inhalation (local) <b>Value:</b> 0.05 mg/m <sup>3</sup> <b>Reference:</b> Ni, inhalable dust
PNEC	<b>Route of exposure:</b> Freshwater <b>Value:</b> 7,1 μg/l
	<b>Route of exposure:</b> Saltwater <b>Value:</b> 8,6 μg/l
	Route of exposure: Freshwater sediments Value: 109 mg/kg
	Route of exposure: Saltwater sediments Value: 109 mg/kg
	Route of exposure: Soil Value: 29,9 mg/kg
	Route of exposure: Sewage treatment plant STP Value: 0,33 mg/l

### 8.2. Exposure controls

### Precautionary measures to prevent exposure

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Avoid contact with skin and eyes. Do not breathe dust. Avoid prolonged and repeated contact.

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

## **SECTION 9: Physical and chemical properties**

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

Physical state	Solid.
Colour	Silver. Grey.
Odour	Odourless.
Odour limit	Comments: Not relevant.
рН	Status: In delivery state Comments: insoluble
Melting point / melting range	Comments: 1455°C
Boiling point / boiling range	Comments: 2730°C
Flash point	Comments: Technically not feasible.
Flammability	The product is not flammable.
Vapour pressure	Comments: 1 mmHg 1810°C
Density	Value: 8,9
Explosive properties	Not explosive
Oxidising properties	Not oxidizing.

### 9.2. Other information

### **Physical hazards**

Particle size

Comments: Massive, solid metal. Nickel electrolytic: full plate cathodes Nickel carbonyl: spherical, diameter 8-20 mm

## **SECTION 10: Stability and reactivity**

There are no known reactivity hazards associated with this product.			
Stable under normal temperature conditions.			
ous reactions			
There are no known reactivity hazards associated with this product.			
Avoid dust formation.			
10.5. Incompatible materials			
Reacts with acids to form flammable/explosive hydrogen gases. Oxidising materials.			
10.6. Hazardous decomposition products			
Metal oxides.			

### **SECTION 11: Toxicological information**

### 11.1. Oplysninger om fareklasser som defineret i forordning (EF) nr. 1272/2008

Substance	Nickel
Acute toxicity	Type of toxicity: Acute
	Effect tested: LD50
	Route of exposure: Oral
	<b>Value:</b> > 9000 mg/kg
	Type of toxicity: Acute
	Effect tested: LC50
	Route of exposure: Inhalation.
	<b>Value:</b> > 10,2 mg/l
	Type of toxicity: Acute
	Effect tested: NOAEL
	Value: 0,012 mg/kg bw /d
	<b>Comments:</b> Ni ion released from metallic nickel in water and food contact material

### Other information regarding health hazards

Assessment of acute toxicity, classification	In case of skin contact : No studies have been found.
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.
General respiratory or skin sensitisation	Skin sens. 1 H317 May cause an allergic skin reaction. Respiratory sensitisation: None.
Mutagenicity	Not classified.
Carcinogenicity, other information	Carc. 2 H351 Suspected of causing cancer via inhalation.
Reproductive toxicity	Not classified.
Assessment of specific target organ toxicity - repeated exposure, classification	STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure . Target Organs Lungs If inhaled LOAEC = 0.1 mg Ni/m <sup>3</sup>
Aspiration hazard, comments	Not Applicable - Inorganic chemical.

### 11.2 Other information

Endocrine disruption	No information available.
Endocrine disruption	No information available.

## **SECTION 12: Ecological information**

### 12.1. Toxicity

Substance	Nickel
Aquatic toxicity, fish	Toxicity type: Acute Value: 0,4 - 320 mg/l Effect dose concentration: LC50 Exposure time: 96 hour(s) Method: Pimephales promelas; Hoang et al., 2004) (Brachydanio rerio; Janssen Pharmaceutica, 1993d) Toxicity type: Chronic Value: 40 - 15420 μg/l Effect dose concentration: EC10
	<b>Method:</b> Brachydanio rerio (Dave & Xiu, 1991) Brachydanio rerio (Kienle et al., 2009)
Ecotoxicity	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

### 12.2. Persistence and degradability

Persistence and degradability description/evaluation	Not Applicable - Inorganic chemical.

### 12.3. Bioaccumulative potential

Bioconcentration factor (BCF)	Value: 270
Bioaccumulation, evaluation	Bioconcentration Terrestrial Compartment BSAF 0.013-1.86

### 12.4. Mobility in soil

Mobility

Kp-Soil: log Kpsoil 2.86

#### 12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB	Not Classified as PBT/vPvB by current EU criteria.
assessment	

### 12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

### 12.7. Other adverse effects

Additional ecological information Not known.

### **SECTION 13: Disposal considerations**

### 13.1. Waste treatment methods

Appropriate methods of disposal for the chemical	Recover and reclaim or recycle, if practical. If recycling is not practicable, dispose of in compliance with local regulations.
Appropriate methods of disposal for the contaminated packaging	Contaminated packaging should be emptied as far as possible. Dispose of waste and residues in accordance with local authority requirements.

### **SECTION 14: Transport information**

#### 14.1. UN number

Comments The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

### 14.2. UN proper shipping name

Comments	The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).
14.3. Transport hazard class	s(es)
Comments	The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).
14.4. Packing group	
Comments	The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).
14.5. Environmental hazards	3
Comments	The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).
14.6. Special precautions for user	

Special safety precautions for user None.

### 14.7. Maritime transport in bulk according to IMO instruments

Transport in bulk (yes/no)

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

No

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

Substance	Nickel
Restriction of chemicals according to Annex XVII (REACH)	27 Nickel CAS No 7440-02-0 EC No 231-111-4 and its compounds

### 15.2. Chemical safety assessment

Substance	Nickel
Chemical safety assessment performed	Yes

### **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
Additional information	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.
Key literature references and sources for data	Nickel metal CSR
Information added, deleted or revised	Relevant changes compared to the previous version of the safety data sheet are indicated with verticle lines in the left margin.
Version	7
Exposure scenario	ENGLISH_20190627_SDS_ES_NICKEL_METAL_DU.pdf