Safety Data Sheet

Nickel

Replaces date: 12/1/2022

Revision date: 1/31/2023
Version: 2.2.0

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

1.1. Product identifier

Trade name: Nickel

Substance name: Nickel

CAS No: 7440-02-0

EC No: 231-111-4

REACH Reg. No.: 01-2119438727-29-xxxx

Index No: 028-002-00-7

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

Recommended uses: Surface treatment, metal for alloy.

1.3. Details of the supplier of the safety data sheet

Supplier

Company: Boliden Bergsøe A/S
Address: Hvissingevej 116
Zip code: 2600
City: Glostrup
Country: DENMARK
E-mail: environment.glostrup@boliden.com
Phone: +45 43268300

1.4. Emergency Telephone Number

+45 43 26 83 00 (company)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

CLP-classification: Skin Sens. 1;H317
Carc. 2;H351
STOT RE 1;H372

Most serious harmful effects: May cause an allergic skin reaction. Suspected of causing cancer. Causes damage to organs through prolonged or repeated exposure.

Prolonged exposure to welding smoke and particles constitutes a risk of developing asthmatic diseases, various respiratory disorders and cancer of the respiratory system. Harmful if vapours from molten metal are inhaled or if the skin comes in contact with molten metal.

2.2. Label elements

Pictograms

Signal word: Danger

Hazard Statements

H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P201	Obtain special instructions before use.
P308+313	IF exposed or concerned: Get medical advice/attention.
P362+364	Take off contaminated clothing and wash it before reuse.

2.3. Other hazards

Assessment to determine PBT and vPvB has not been made. No assessment required, as the product contains inorganic matter only.
Endocrine disrupting properties: None known.

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance	CAS No./ EC No./ REACH Reg. No.	Concentration	Notes	CLP-classification
Nickel	7440-02-0 231-111-4 01-2119438727-29-xxxx	> 99 %		Skin Sens. 1;H317 Carc. 2;H351 STOT RE 1;H372

Please see section 16 for the full text of H- / EUH-phrases.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation: Seek fresh air. Seek medical advice in case of persistent discomfort.

Ingestion: Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Seek medical advice in case of persistent discomfort.

Skin contact: Remove contaminated clothing. Wash skin with soap and water. Seek medical advice in case of persistent discomfort.

Eye contact: Flush with water (preferably using eye wash equipment) until irritation subsides. Seek medical advice if symptoms persist.

General: When obtaining medical advice, show the safety data sheet or label.

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

Suspected of causing cancer. May cause an allergic skin reaction. Causes damage to organs through prolonged or repeated exposure.

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

Treat symptoms. No special immediate treatment required.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: The product is not directly flammable. Choose extinguishing agents based on the surrounding fire.

Unsuitable extinguishing media: Do not use water stream, as it may spread the fire.

5.2. Special hazards arising from the substance or mixture

The product is not directly flammable. Avoid inhalation of vapour and fumes - seek fresh air.

5.3. Advice for firefighters

Move containers from danger area if it can be done without risk. Avoid inhalation of vapour and flue gases - seek fresh air. Wear Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Wear safety goggles if there is a risk of eye splash. In case of insufficient ventilation, wear respiratory protective equipment. Wear gloves. Stay upwind/keep distance from source.

For emergency responders: In addition to the above: Protective suit equivalent to EN 368, type 3, is recommended.

6.2. Environmental precautions

Prevent spillage from entering drains and/or surface water.

6.3. Methods and material for containment and cleaning up

Sweep up/collect spills for possible reuse or transfer to suitable waste containers.

6.4. Reference to other sections

See section 8 for type of protective equipment. See section 13 for instructions on disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Work under effective process ventilation (e.g. local exhaust ventilation). Running water and eye wash equipment must be available. Wash hands before breaks, before using restroom facilities, and at the end of work. A workplace assessment must be conducted to ensure that employees are not exposed to effects that may involve a risk during pregnancy. A workplace assessment must be conducted to ensure that employees are not exposed to effects that may involve a risk when breastfeeding.

7.2. Conditions for safe storage, including any incompatibilities

Store safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc. Store in a cool, dry place. Do not store with the following: Strong alkalis/ Strong acids/ Strong reducing agents.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit: Contains no substances subject to reporting requirements

Measuring methods: Compliance with occupational exposure limits may be checked by occupational hygiene measurements.

Legal basis: Commission Directive 2000/39/EC (Occupational Exposure Limits) as subsequently amended. Last amended by Commission Directive 2019/1831/EU. Directive 2004/37/EC (Exposure to carcinogens or mutagens at work) as subsequently amended. Last amended by Directive 2022/431/EU. Resolution 2019/2182(INL) (Protecting workers from asbestos) as subsequently amended. Last amended by resolution 2022/C 184/03.

PNEC

Nickel, cas-no 7440-02-0				
Exposure	Value	Assessment Factor	Extrapolation Method	Note
PNEC aqua (freshwater)	7,1 µg/l			
PNEC aqua (marine water)	8,6 µg/l			
PNEC sediment (freshwater)	109 mg/kg dw			
PNEC sediment (marine water)	109 mg/kg bw			
PNEC STP (wastewater-treatment facilities)	330 µg/l			
PNEC oral (foodstuffs)	120 µg/kg			

DNEL - workers

Nickel, cas-no 7440-02-0					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Inhalation DNEL (acute/short-term exposure - local effects)	11,9 mg/m³				
Dermal DNEL (long-term exposure - local effects)	0,05 mg/m³				
Inhalation DNEL (long-term exposure - systemic effects)	0,05 mg/m³				
Dermal DNEL (acute/short-term exposure - local effects)	0,035 mg/cm²				

DNEL - general population

Nickel, cas-no 7440-02-0					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note

Oral DNEL (acute/short-term exposure - systemic effects)	0,37 mg/kg bw/day				
Inhalation DNEL (acute/short-term exposure - local effects)	0,80 mg/m³				
Oral DNEL (long-term exposure - systemic effects)	0,37 mg/kg bw/day				
Oral DNEL (acute/short-term exposure - systemic effects)	0,011 mg/kg bw/day				
Inhalation DNEL (long-term exposure - local effects)	0,06 mg/m³				
Inhalation DNEL (long-term exposure - systemic effects)	0,06 mg/m³				
Dermal DNEL (long-term exposure - local effects)	0,035 mg/cm²				

8.2. Exposure controls

Appropriate engineering controls: Wear the personal protective equipment specified below.

Personal protective equipment, eye/face protection: Wear safety goggles if there is a risk of eye splash. Eye protection must conform to EN 166.

Personal protective equipment, hand protection: Wear protective gloves which protect against contact and splashing from molten metal. Gloves must conform to EN 12477.

Personal protective equipment, respiratory protection: When heating/using the product without process ventilation, you must use respiratory equipment with B/P3 filter. Respiratory protection must conform to one of the following standards: EN 136/140/145.

Environmental exposure controls: Ensure compliance with local regulations for emissions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Parameter	Value/unit
State	Solid substance
Colour	Grey
Odour	Odourless
Solubility	Insoluble

Parameter	Value/unit	Remarks
Odour threshold	No data	
Melting point	1455 °C	
Freezing point	No data	
Initial boiling point and boiling range	2730 °C	
Flammability (solid, gas)	No data	
Flammability limits	No data	
Explosion limits	No data	

Flash Point	No data	
Auto-ignition temperature		Not self-igniting
Decomposition temperature	No data	
pH (solution for use)	No data	
pH (concentrate)	No data	
Kinematic viscosity	No data	
Viscosity	No data	
Partition coefficient n-octonol/water	No data	
Vapour pressure	1 mmHg	1810°C
Density	No data	
Relative density	8.9 g/cm³	(25 °C)
Vapour density	No data	
Relative density (sat. air)	No data	
Particle characteristics	No data	

9.2. Other information

Parameter	Value/unit	Remarks
Explosive properties		Non-explosive
Oxidising properties		Non-oxidising.

Other Information: None.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with the following: Acids/ Oxidisers.

10.2. Chemical stability

The product is stable when used in accordance with the supplier's directions.

10.3. Possibility of hazardous reactions

Reacts with strong oxidizing agents during heavy heat generation.

10.4. Conditions to avoid

Avoid formation of dust. Avoid contact with moisture and water.

10.5. Incompatible materials

Acids/ Oxidisers.

10.6. Hazardous decomposition products

Ni(CO)4
The product decomposes when combusted or heated to high temperatures and the following toxic gases can be formed: Metal oxides.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity - oral

Nickel, cas-no 7440-02-0

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 9000 mg/kg			

Ingestion may cause discomfort. The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Acute toxicity - dermal: The product does not have to be classified. Test data are not available.

Acute toxicity - inhalation

Nickel, cas-no 7440-02-0

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
	LC50 (vapour)		0.015 mg/l			

The product does not release hazardous vapours in metallic form. The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Skin corrosion/irritation

Nickel, cas-no 7440-02-0

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit		7 d	500 mg	Non-irritating		

May cause slight irritation. The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Serious eye damage/eye irritation: May cause eye irritation. The product does not have to be classified. Test data are not available.

Respiratory sensitisation or skin sensitisation: May cause sensitisation by skin contact. Symptoms include reddening, swelling, blistering and ulceration - often slowly developing.

Germ cell mutagenicity: The product does not have to be classified. Test data are not available.

Carcinogenic properties: Suspected of causing cancer.

Reproductive toxicity: The product does not have to be classified. Test data are not available.

Single STOT exposure: The product does not have to be classified. Test data are not available.

Repeated STOT exposure: Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: The product does not have to be classified. Test data are not available.

11.2. Information on other hazards

Endocrine disrupting properties: None known.

Other toxicological effects: None known.

SECTION 12: Ecological information

12.1. Toxicity

The product does not have to be classified. Test data are not available.

12.2. Persistence and degradability

The concept of biodegradability is not relevant, as the substance is inorganic.

12.3. Bioaccumulative potential

Test data are not available.

12.4. Mobility in soil

Test data are not available.

12.5. Results of PBT and vPvB assessment

No assessment required, as the product contains inorganic matter only.

12.6. Endocrine disrupting properties

None known.

12.7. Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Avoid discharge to drain or surface water.
If this product as supplied becomes a waste, it meets the criteria of a hazardous waste (Dir. 2008/98/EU). Collect spills and waste in closed, leak-proof containers for disposal at the local hazardous waste site.
Collect spills and waste in closed, leak-proof containers for disposal at the local hazardous waste site.

Category of waste: EWC code: Depends on line of business and use, for instance 17 04 09* metal waste contaminated with hazardous substances

SECTION 14: Transport information

14.1. UN number or ID number: Not applicable.
14.2. UN proper shipping name: Not applicable.
14.3. Transport hazard class(es): Not applicable.
14.4. Packing group: Not applicable.
14.5. Environmental hazards: Not applicable.

14.6. Special precautions for user

None.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

SECTION 15: Regulatory information

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

Special Provisions: Regulation (EU) of the European Parliament and of the Council concerning the export and import of hazardous chemicals.
Council Directive (EC) on the protection of young people at work.

Covered by:

Council Directive (EC) on the protection of young people at work.
Council Directive (EC) on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.

15.2. Chemical Safety Assessment

REACH Reg. No.	Substance name
01-2119438727-29-xxxx	Nickel

SECTION 16: Other information

Version history and indication of changes

Version	Revision date	Responsible	Changes
2.2.0	1/31/2023	Bureau Veritas HSE / MPE	1, 2, 8, 11, 12, 16

Abbreviations:
STOT: Specific Target Organ Toxicity
PBT: Persistent, Bioaccumulative and Toxic
vPvB: Very Persistent and Very Bioaccumulative
DNEL: Derived No Effect Level
PNEC: Predicted No Effect Concentration

Other Information:
This safety data sheet has been prepared for and applies to this product only. It is based on our current knowledge and the information that the supplier was able to provide about the product at the time of preparation. The safety data sheet complies with applicable law on preparation of safety data sheets in accordance with 1907/2006/EC (REACH) as subsequently changed.

Training advice:
A thorough knowledge of this safety data sheet should be a prerequisite condition.

Classification method:
Calculation based on the hazards of the known components.

List of relevant H-statements

H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure.

SDS is prepared by

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