

SAFETY DATA SHEET

Issue Date 01-Apr-2011 Revision Date 26-Mar-2015 Version 3

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

1.1. Product identifier

Safety data sheet number 227019GNV
Product Name Nickel
Trade Name Nickel

REACH registration number 01-2119438727-29-0003

 EC No.
 231-111-4

 CAS No.
 7440-02-0

 Chemical Name
 Nikkel

Synonyms Nickel Squares, SUPERELECTRO TM, Full Plate Cathode, Nickel Crowns, D-Crowns,

Micros, Sundry, Ribs, Starting Sheets

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

Recommended Use Manufacture and use of parts and products. Other registered uses for this product, can be

found in section 15 of this eSDS.

Uses advised against Uses by workers in industrial setting:

- Design and manufacture of nickel in materials or articles intended for direct and prolonged contact with the skin where the release of nickel exceeds the limit set out in Directives 94/27/EC and 2004/96/EC and REACH Regulation 1907/2006 (Annex XVII).

- Manufacture of Ni-containing food contact materials (except Ni-Cr-plated materials) for which migration into foodstuff would exceed 0.1 mg/kg of Ni (according to Council of Europe Guidelines on metals and alloys used as food contact materials, 2002).

- Manufacture of nickel-containing HIGH SULPHUR stainless steel (AISI grade 303, or ISO 7153-1reference grade N) for surgical implant applications.

- Manufacture of nickel or chromium-nickel plated heating coils in immersion kettles.

Uses by professional workers:

- Use of nickel-containing HIGH SULPHUR stainless steel (AISI grade 303, or ISO 7153-1reference grade N) for surgical implant applications.

- Use of nickel in materials or articles intended for direct and prolonged contact with the skin where the release of nickel exceeds the limit set out in Directives 94/27/EC and 2004/96/EC and REACH Regulation 1907/2006 (Annex XVII).

By consumer:

- Use of nickel in materials or articles intended for direct and prolonged contact with the skin where the release of nickel exceeds the limit set out in Directives 94/27/EC and 2004/96/EC and REACH Regulation 1907/2006 (Annex XVII).
- Use of Ni-containing food contact materials (with exception of Ni-Cr-plated materials) for which migration into foodstuff would exceed 0.1 mg/kg of Ni (according to Council of Europe Guidelines on metals and alloys used as food contact materials, 2002).
- The use of nickel or chromium-nickel plated heating coils in immersion kettles.

1.3. Details of the supplier of the safety data sheet

Manufacturer Glencore Nikkelverk AS

Postboks 604 4606 Kristiansand NORWAY.

E-mail address product.safety@glencore.com

1.4. Emergency telephone number

Emergency Telephone +1 760 476 3961 (333085) **Local Emergency Telephone** United Kingdom: 08454 24 24 24

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Full text of H- and EUH-phrases: see section 16

Skin sensitization	Category 1 - (H317)
Carcinogenicity	Category 2 - (H351)
Specific target organ toxicity (repeated exposure)	Category 1 - (H372)

Classification according to Directive 67/548/EEC or 1999/45/EC

Full text of R-phrases: see section 16

Hazard symbols

T - Toxic

R-code(s)

Carc. Cat. 3;R40, R48/23, R43

2.2. Label elements

Product identifier

028-002-00-7 Contains Nickel



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 - EU (§28, 1272/2008)

P201 - Obtain special instructions before use

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves

P314 - Get medical advice/attention if you feel unwell

P405 - Store locked up

P501 - Dispose of contents/ container to an approved waste disposal plant

2.3. Other hazards

The PBT and vPvB criteria of Annex XIII to the Regulation does not apply to inorganic substances, such as nickel metal.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical Name	EC No.	CAS No.	Weight-%	Classification	REACH
				according to	registration
				Regulation (EC)	number

				No. 1272/2008 [CLP]	
Nickel	231-111-4	7440-02-0	>=85<=100	Skin Sens. 1 (H317) Carc. 2 (H351) STOT RE 1 (H372)	01-2119438727- 29-0003

Additional information

This substance has workplace exposure limit(s). This product is registered under the REACH Regulation 1907/2006 as a mono-constituent substance. For more detailed chemical composition, refer to the certificate of analysis. All concentrations are in percent by weight.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Get medical advice/attention if you feel unwell. Seek medical attention for all burns,

regardless how minor they may seem. Show this safety data sheet to the doctor in

attendance.

Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for

breathing. If symptoms persist, call a physician.

Skin contact Wash skin with soap and water. In case of eczema or other skin disorders seek medical

attention and take along these instructions. In case of contact with molten product, cool rapidly with water and seek immediate medical attention. Removal of solidified molten material from skin requires medical assistance. Cuts or abrasions should be treated

promptly with thorough cleansing of the affected area.

Eye contactDo not rub affected area. Remove contact lenses, if present and easy to do. Continue

rinsing. Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. Eyewash stations. If eye irritation persists: Get medical

advice/attention.

Ingestion Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. If

symptoms persist, call a physician.

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

Symptoms Irritating to eyes, skin and respiratory tract. Sensitisation.

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

Note to physiciansTreat symptomatically. Symptoms may be delayed.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Special powder against metal fire. Dry chemical, soda ash, lime or sand. Water spray (fog).

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Hazardous metal fumes and oxides. Dusts or fumes may form explosive mixtures in air. In a fire, nickel may form nickel carbonyl, a highly toxic substance and known carcinogen.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required. Keep unnecessary personnel away. Move containers from fire area if you can do it without risk.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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Personal precautions

Ensure adequate ventilation, especially in confined areas. Avoid contact with eyes and skin. Avoid breathing dust/fume/gas/mist/vapors/spray. Use personal protection recommended in Section 8.

For emergency responders

Use personal protection recommended in Section 8.

6.2. Environmental precautions

Avoid release to the environment. Avoid spreading dust or contaminated materials.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Collect spillage. Allow spilled material to solidify and scrape up with shovels into a suitable

container for recycle or disposal. Collect dust or particulates using a vacuum cleaner with a

HEPA filter.

6.4. Reference to other sections

See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Advice on safe handling

Welding, burning, sawing, brazing, grinding or machining operations may generate fumes and dusts. Ensure adequate ventilation, especially in confined areas. Use appropriate tools. Avoid contact with sharp edges and hot surfaces. Avoid generation of dust. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with molten material. Do not use water on molten metal. Use personal protective equipment as required. Do not eat, drink or smoke when using this product.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep in a dry place. Store away from incompatible materials.

7.3. Specific end use(s)

Specific use(s) For detailed information, see section 15. Recommendations given in the exposure scenario

for the uses are distributed and annexed as separate documents to this eSDS.

Risk Management Methods (RMM) The information required is contained in this Material Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure LimitsThe product does not contain any hazardous materials with occupational exposure limits established for the EEC or its members.

Chemical Name	European Union	United Kingdom
Nickel	-	TWA: 0.5 mg/m ³
7440-02-0		STEL: 1.5 mg/m ³
		Potential for cutaneous absorption

Derived No Effect Level (DNEL) General Population Acute Systemic effects

Oral 1.2 mg/kg/day

Derived No Effect Level (DNEL) Workers Long term Local effects

 Dermal
 0.015 mg/m³

 Inhalation
 0.05 mg/m³

Predicted No Effect Concentration No information available

(PNEC)

Freshwater 3.6 µg/l Ni2+ Marine water 8.6 µg/l Ni2+ 29.9 mmol/mol 0.33 mg/l Impact on Sewage Treatment

8.2. Exposure controls

Engineering Controls Minimize exposure by partial enclosure of the operation or equipment and provide extract

> ventilation at openings. Use explosion-proof equipment if high dust/air concentrations are possible. Personal protective equipment should be chosen according to the CEN standards

and in discussion with the supplier of the personal protective equipment. The recommendations listed below are only an advice and should be evaluated by an occupational hygienist or safety expert who is familiar with the specific situation and use.

Personal protective equipment

Eye/face protection Wear dust-resistant safety goggles where there is danger of eye contact. In addition to

safetyglasses or goggles, a welding helmet with appropriate shaded shield is required during welding, burning, or brazing. A face shield is recommended, in addition to safety

glasses or goggles, during sawing, grinding, or machining. Heat resistant gloves are recommended when handling molten materials. Wear suitable **Hand Protection**

protective gloves to prevent cuts and abrasions. E.g. type of ¾ dipped natural latex, with steel, fiberglass and Kevlar liner and long knitted cuff, cut protection level 5. Suitable gloves

can be recommened by the supplier.

Wear suitable protective clothing. Regular protective clothing with high visibility according to Skin and body protection

EN471 Class 2 is recommended. Arm protection of HDPE / glass fiber is recommended.

Wash hands thoroughly after handling.

In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory

equipment. Recommended is a half mask type FFP3. Suitable mask can be recommended

by the supplier.

Particle filter type P3. **Recommended Filter Type**

Environmental exposure controls

Respiratory protection

Contain spills and prevent releases and observe national regulations on emissions. Local

Not applicable

Not applicable

Non flammable

authorities should be advised if significant spillages cannot be contained.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Solid Physical state

Massive, solid metal Odor Odorless **Appearance** Color Silver-grey Odor threshold Not applicable

Values Remarks • Method Property Not applicable

1455 °C 2651 °F Melting point / freezing point

2730 °C 4946 °F Boiling point / boiling range

Flash point **Evaporation rate**

Flammability Limit in Air Upper flammability limit:

Flammability (solid, gas)

No information available Lower flammability limit: No information available

Vapor pressure 1 mm Hg at 1810 °C

Vapor density Not applicable **Specific Gravity** Not applicable insoluble Water solubility

No information available Solubility(ies) Partition coefficient Not applicable

No information available **Autoignition temperature Decomposition temperature**

Toxic gases and vapors (such as nickel carbonyl) may be released in the decomposition of nickel

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Kinematic viscositycompoundDynamic viscosityNot applicableExplosive propertiesNot explosiveOxidizing propertiesNot an oxidizer

9.2. Other information

Softening point No information available Molecular weight No information available

VOC Content (%) Not applicable

Density 8.9 at 25 °C (77 °F)

Bulk density No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Stable under normal conditions.

Remarks No data available

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization Hazardous polymerization does not occur.

Possibility of Hazardous Reactions None under normal processing.

10.4. Conditions to avoid

Incompatible materials. Contact with acids will release flammable hydrogen gas.

10.5. Incompatible materials

Incompatible with oxidizing agents, Fluorides, Ammonia, Halogens, Sulphur, Acids, Nitrates, Phosphorus

10.6. Hazardous decomposition products

Welding, burning, sawing, brazing, grinding or machining operations may generate fumes and dusts.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Product Information

The acute oral toxicity of nickel metal has been determined in a well-performed animal study which concluded the acute oral LD50 was greater than >9000 mg/kg bw. High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever. Data on acute toxicity in animals via dermal exposure have not been found. Dermal acute toxicity is expected to be low in view of the low oral toxicity and the negligible absorption via the skin.

Inhalation Dust may irritate respiratory system.

Eye contact Avoid direct eye contact with product, also via contamination on hands.

Skin contact May cause sensitization by skin contact.

IngestionMay be ingested by accident.Unknown acute toxicityNo information available.

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 9,009.00 mg/kg

Oral LD50

Oral EDOC			
Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Nickel	> 9000 mg/kg (Rat)		

Skin corrosion/irritationNot irritant in skin irritation study using the rabbit (animal number: 2, dose: 500mg/animal's

ear, exposure period: 24 hours, observation period: 7 days).

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Serious eye damage/eye irritation No studies of eye irritation by metallic nickel have been found. Toxicity data from

water-soluble nickel compounds can be used to estimate the potential of nickel metal to

cause eye irritation. No classification for eye irritation is proposed.

Sensitization Not a respiratory sensitiser. Sufficient data from human studies exists to warrant

classification of Ni metal as a dermal sensitizer.

Germ cell mutagenicityTest data conclusive but not sufficient for classification.

Suspected as carcinogen for human by inhalation.

 Chemical Name
 European Union

 Nickel
 Carc. 2

Reproductive toxicityTest data conclusive but not sufficient for classification. **STOT - single exposure**Test data conclusive but not sufficient for classification.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. Lungs. Respiratory

system.

Symptoms The product causes irritation of eyes, skin and mucous membranes. Sensitizing.

Aspiration hazard Not classified.

SECTION 12: Ecological information

12.1. Toxicity

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Nickel	0.18 mg/L: 72 h Pseudokirchneriella	100 mg/L: 96 h Brachydanio rerio	100 mg/L: 48 h Daphnia magna
	subcapitata EC50 0.174 - 0.311	LC50 1.3 mg/L: 96 h Cyprinus	EC50 1 mg/L: 48 h Daphnia magna
	mg/L: 96 h Pseudokirchneriella	carpio LC50 semi-static 10.4 mg/L:	EC50 Static
	subcapitata EC50 static	96 h Cyprinus carpio LC50 static	

12.2. Persistence and degradability

The product is not biodegradable.

12.3. Bioaccumulative potential

Accumulates in soil and sediment. Potential to bioaccumulate is low.

Bioconcentration factor (BCF) 270 mg/L

12.4. Mobility in soil

Mobility in soilMetal in massive form is not mobile in the environment.MobilityMetal in massive form is not mobile in the environment.

12.5. Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects

Not expected to be harmful to aquatic organisms

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused

products

Disposal should be in accordance with applicable regional, national and local laws and regulations. Recover and recycle, if practical. Solid metal and alloys in the form of particles may be reactive. Its hazardous characteristics, including fire and explosion, should be

determined prior to disposal.

Contaminated packaging Since emptied containers retain product residue, follow label warnings even after containers

is emptied.

Waste codes / waste designations

according to EWC / AVV

06 04 99

SECTION 14: Transport information

4.5.5	
<u>ADR</u>	
14.1 UN/ID no.	Not regulated
14.2 Proper shipping name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None
RID	
14.1 UN/ID no.	Not regulated
14.2 Proper shipping name	Not regulated

d 14.3 Hazard Class Not regulated 14.4 Packing Group Not regulated Not applicable 14.5 Environmental hazard

14.6 Special Provisions None

ADN

14.1 UN/ID no. Not regulated 14.2 Proper shipping name Not regulated 14.3 Hazard Class Not regulated 14.4 Packing Group Not regulated 14.5 Marine pollutant Not applicable

14.6 Special Provisions None

IATA

14.1 UN/ID no. Not regulated 14.2 Proper shipping name Not regulated Not regulated 14.3 Hazard Class Not regulated 14.4 Packing Group 14.5 Environmental hazard Not applicable

14.6 Special Provisions None

IMDG Not regulated as dangerous good

14.1 UN/ID no. Not regulated 14.2 Proper shipping name Not regulated 14.3 Hazard Class Not regulated 14.4 Packing Group Not regulated 14.5 Marine pollutant Not applicable 14.6 Special Provisions None

14.7 Transport in bulk according to Not applicable

Annex II of MARPOL 73/78 and the

IBC Code

MARPOL Non marine pollutant

ICAO (air)

14.1 UN/ID no. Not regulated 14.2 Proper shipping name Not regulated Not regulated 14.3 Hazard Class Not regulated 14.4 Packing Group 14.5 Environmental hazard Not applicable

14.6 Special Provisions None

SECTION 15: Regulatory information

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

Chemical Name	French RG number	Title
Nickel	RG 37ter	-
7440-02-0		

European Union

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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

Take note of Directive 94/33/EC on the protection of young people at work

Not to be used by professional users below 18 years of age, see the National Working Environment Authorities Executive Order on young peoples dangerous work.

Take note of Directive 92/85/EC on the protection of pregnant and breastfeeding women at work

Not to be used by pregnant workers and workers who have recently given birth or who are breastfeeding.

Authorizations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII) This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV)

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV
Nickel - 7440-02-0	Use restricted. See item 27.	

Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

Toxic

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

International Inventories

TSCA Listed
DSL/NDSL Listed
EINECS/ELINCS Listed
IECSC Listed
KECL Listed
AICS Listed

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Indication of changes Sections changed from previous version:

Numbering of sub headers in all sections

1.4: Local Emergency Telephone

2.2: Numbering of Hazard statements and Precautionary statements

8.2: Type and quality Personal Protective Equipment

16: Indication of changes

Risk Combination Phrases R40 - Limited evidence of a carcinogenic effect

R43 - May cause sensitization by skin contact

R48/23 - Toxic: danger of serious damage to health by prolonged exposure through

inhalation

Full text of H-Statements referred to H317 - May cause an allergic skin reaction

under section 3 H351 - Suspected of causing cancer if inhaled

H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

Legend PBT - Persistent, Bioaccumulative and toxic

vPvB - very Persistent and very Bioaccumulative

DSD - Directive 67/548/EEC **CLP** - Regulation No.1272/2008

STOT - Specific target organ toxicity

DNEL - Derived No Effect Level

PNEC - Predicted No Effect Level

LD50 - Lethal Dose, 50%

EC50 - Effective Concentration, 50 % **LC50** - Lethal Concentration, 50 % STEL (Short Term Exposure Limit) TWA (time-weighted average) **HDPE** - High-density Polyethylene

FFP - Filtering FacePiece

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road

RID - Regulations concerning the International carriage of Dangerous goods by rail

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IATA - International Air Transport Association

IMDG - International Maritime Dangerous Goods code

MARPOL - International Convention for the Prevention of Pollution of the Sea by Oil **IBC** - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

ICAO - International Civil Aviation Organization

TSCA - Toxic Substances Control Act

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

DSL/NDSL - Canada Domestic Substance List/Non-Domestic Substance List

IECSC - China Inventory of Existing Chemical Substances **KECL** - Korean Existing and Evaluated Chemical Substances

AICS - Australian Inventory of Chemical Substances

IUCLID - International Uniform Chemical Information Database

IUCLID - International Uniform Chemical Information Database

IARC - Monographhs: Overall Evaluation of Carcinogenicity (Volume 1- 106)

Classification procedure

Calculation method On basis of test data

Key literature references and

sources for dataIARC MonographsIssue Date01-Apr-2011Revision Date26-Mar-2015Revision NoteNot applicable.

Training Advice

Follow training instructions when handling this material

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet