SAFETY DATA SHEET

NICKEL HYDROXYCARBONATE

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	15.11.2017
Revision date	08.08.2022

1.1. Product identifier

Product name	NICKEL HYDROXYCARBONATE
REACH Reg. No.	01-2119490826-25-0000
CAS No.	12607-70-4
EC No.	235-715-9
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	Plating agent; Catalyst manufacture ; Production of nickel salts ; Nickel powder manufacture ; enamel frits manufacture ; Production of pigments ; repackaging
Uses advised against	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	Norilsk Nickel Harjavalta Oy
Postal address	Teollisuuskatu 1
Postcode	29200
City	Harjavalta
Country	Finland
Telephone number	+358 2 537 11
Email	product.safety@nornickel.fi

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 the 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. 2; H330 STOT RE 1; H372 Repr. 1B; H360D Carc. 1A; H350i Eye Irrit. 2; H319 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. H330 Fatal if inhaled. H372 Causes damage to organs through prolonged or repeated exposure H360D May damage the unborn child. H350i May cause cancer by inhalation. H319 Causes serious eye irritation. 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. P270 Do not eat, drink or smoke when using this product. P362 Take off contaminated clothing. P273 Avoid release to the environment. P280 Wear protective gloves / protective clothing / eye protection / face

protection.
P308+P313 IF exposed or concerned: Get medical advice / attention.

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 hydroxycarbonate	CAS No.: 12607-70-4 EC No.: 235-715-9	Skin Irrit. 2; H315 Skin Sens. 1; H317 Muta. 2; H341 Acute tox. 4; H302 Acute tox. 2; H330 STOT RE 1; H372 Repr. 1B; H360D Carc. 1A; H350i Eye Irrit. 2; H319 Resp. Sens. 1; H334 Aquatic Acute 1; H400; M-factor 1 Aquatic Chronic 1; H410; M-factor 1	100 %	
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 source of contamination. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. Get immediate medical advice/attention.
Skin contact	Wash contaminated clothing before re-use. Wash the skin immediately with soap and 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. Get immediate medical advice/attention.

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	None.

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;
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. Do not get in eyes, on skin, or on clothing. Avoid generating excess dust. Provide 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	Collect spillage in containers, seal securely and deliver for disposal according to local regulations. (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	Exposure limits	TWA Year
Nickel compounds *		Limit value (8 h) : 0,05 mg/m3 Source: HTP Finland Limit value (8 h) : 0,01 mg/m3 Source: HTP Finland Comments: Ni, Alveolar dust fraction	TWA Year: 2013

DNEL / PNEC

Substance	Nickel hydroxycarbonate
DNEL	**Group:** Professional **Route of exposure:** Acute inhalation (systemic) **Value:** 30,4 mg/m³ **Reference:** Ni, inhalable dust **Group:** Professional **Route of exposure:** Acute inhalation (local) **Value:** 0,8 mg/m³ **Reference:** Ni, inhalable dust **Group:** Professional **Route of exposure:** Long-term inhalation (systemic) **Value:** 0,05 mg/m³ **Reference:** Ni, inhalable dust **Group:** Professional **Route of exposure:** Long-term dermal (local) **Value:** 0.003 mg/cm² **Group:** Professional **Route of exposure:** Long-term inhalation (local) **Value:** 0,05 mg/m³ **Reference:** Ni, inhalable dust
PNEC	**Route of exposure:** Freshwater

Value: 7,1 µg/l

Route of exposure: Saltwater
Value: 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

Appropriate engineering controls	Cleaning machines such as power sweeper, no direct manual cleaning.
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 prolonged and repeated contact. Wear necessary protective equipment. Eye wash facilities and emergency shower must be available when handling this product. Immediately change drenched clothing. Wash the skin immediately with soap and water. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feeding stuffs. Private clothes and working clothes should be kept 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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Granules , Paste , Powder
Colour	Green.
Odour	odourless
Melting point / melting range	Comments: Decomposes before melting.
Flammability	does not ignite
Vapour pressure	Comments: Not applicable.
Vapour density	Comments: Not applicable.
Density	Value: 0,50 - 0,60 g/cm³ Comments: Powder Value: 0,60 - 0,70 g/cm³ Comments: Granules Value: 0,50 - 0,60 g/cm³ Comments: Paste
Solubility	Medium: Water Value: 0.0329 g/l Temperature: 20 °C
Partition coefficient: n-octanol/ water	Comments: Not applicable.
Auto-ignition temperature	Comments: >400°C (Chemical Safety Assessment)
Decomposition temperature	Comments: approx. 240°C
Explosive properties	Not explosive
Oxidising properties	Not applicable.

9.2. Other information

Physical hazards

Particle size	Comments: Granulometry from manufacturer.

Other physical and chemical properties

Physical and chemical properties	Granules , Paste = Moisture content: 20%

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stability	Stable under recommended 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	Acids;

10.6. Hazardous decomposition products

Hazardous decomposition products	Metallic oxides;

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Substance	Nickel hydroxycarbonate
Acute toxicity	**Effect tested:** LD50 **Route of exposure:** Oral **Value:** 2000 mg/kg bw **Comments:** NOAEL (oral): 383 mg Ni/kg/day **Effect tested:** LC50 **Route of exposure:** Inhalation. **Value:** 0,24 mg/l **Comments:** NOAEC (inhalation): 26 mg Ni/m3 (males, MMAD=1.9 µm))

Other information regarding health hazards

Assessment of acute toxicity, classification	Acute tox. 2 H330 Fatal if inhaled. Acute tox 4 H302 Harmful if swallowed.
Assessment of skin corrosion / irritation, classification	Skin irrit. 2 H315 Causes skin irritation. Eye irrit.2 H319 Causes serious eye irritation.
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.
Mutagenicity	Muta. 2 H341 Suspected of causing genetic defects .
Carcinogenicity, other information	Carc. 1A H350i May cause cancer by inhalation.
Reproductive toxicity	Repr. 1B H360D May damage the unborn child.
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/m³
Aspiration hazard, comments	Not applicable. Solid

11.2 Other information

Endocrine disruption	No information available.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Nickel hydroxycarbonate
Aquatic toxicity, fish	**Toxicity type:** Acute **Value:** 0,4 - 320 mg/l **Effect dose concentration:** LC50 **Exposure time:** 96 hour(s) **Method:** Fresh water **Test reference:** (Pimephales promelas; Hoang et al., 2004) (Brachydanio rerio; Janssen Pharmaceutica, 1993d **Toxicity type:** Acute **Value:** 24.8 - 350 mg/l **Effect dose concentration:** LC50 **Exposure time:** 96 hour(s) **Method:** Sea water **Test reference:** (Fundulus heteroclitus; Bielmyer et al., 2013) (Fundulus heteroclitus; Eisler and Hennekey, 1977)
Substance	Nickel hydroxycarbonate
Aquatic toxicity, crustacean	**Toxicity type:** Acute **Value:** 0.013 - 4970 mg/l **Effect dose concentration:** LC50 **Exposure time:** 48 hour(s) **Method:** Fresh water **Test reference:** (Ceriodaphnia dubia; Schubauer-Berigan et al., 1993) (Daphnia magna; Chapman and Recht, 1980) **Toxicity type:** Acute **Value:** 0.23 - 415 mg/l **Effect dose concentration:** LC50 **Exposure time:** 48 hour(s) **Method:** Sea water **Test reference:** (Haliotis refescens; Hunt et al., 2002b) (Penaeus duorarum; Bentley et al.,1975b)
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 Aq. Acute 1 H400 Very toxic to aquatic life. Aq. Chr. 1 H410 Very toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

Substance	Nickel hydroxycarbonate
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 assessment	Not Classified as PBT/vPvB by current EU criteria.

12.6. Endocrine disrupting properties

Endocrine disrupting properties	No data available.

12.7. Other adverse effects

Additional ecological information	No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Appropriate methods of disposal for the chemical	Recover and reclaim or recycle, if practical. Dispose of as special waste in compliance with local and national regulations.
Appropriate methods of disposal for the contaminated packaging	Contaminated packaging should be emptied as far as possible. Packaging that cannot be cleaned should be disposed as special waste in compliance with local and national regulations.

SECTION 14: Transport information

14.1. UN number

Comments	UN3288

14.2. UN proper shipping name

Comments	TOXIC SOLID, INORGANIC, N.O.S. (nickel hydroxycarbonate)

14.3. Transport hazard class(es)

Comments	6.1

14.4. Packing group

Comments	II

14.5. Environmental hazards

Comments	Dangerous for environment

14.6. Special precautions for user

Special safety precautions for user	Tunnel restriction code D/E IMDG code Segregation group: None.

14.7. Maritime transport in bulk according to IMO instruments

Transport in bulk (yes/no)	No

SECTION 15: Regulatory information

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

Substance	Nickel hydroxycarbonate
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 hydroxycarbonate
Chemical safety assessment performed	Yes

SECTION 16: Other information

List of relevant H-phrases (Section 2 and 3)	H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H330 Fatal if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H341 Suspected of causing genetic defects 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.
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.
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	9
Exposure scenario	ENGLISH_20190627_SDS_ES_NICKEL HYDROXYCARBONATE_DU.pdf