



1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

- 1.1 Identification of the article**
- 1.1.1 Commercial Product Name**
NICKEL SULPHATE
- 1.1.2 Product code**
N70, N7000, N7021, N7041, N71, N7102, N7103, N7131, N7132, N7133, N7151, N7161, N72, N7201, N73, N74, N7403, N7441, N7451, N75, N7541, N76, N7631, N7633, N7651, N77
- 1.2 Use of the Substance/Preparation**
- 1.2.1 Expressed in writing**
Plating agent;
- 1.3 Identification of the substance/preparation and the company/undertaking**
- 1.3.1 Supplier**
Norilsk Nickel Harjavalta Oy
- 1.3.2 Contact information**
- Street address** Teollisuuskatu 1
Postcode and post office FIN 29200 Harjavalta
Telephone +358 (0)2 53711
Telefax +358 (0)2 5371 2250
Email product.safety@nornik.fi
- 1.4 Emergency telephone number**
- 1.4.1 Telephone number, name and address**
Norilsk Nickel Harjavalta Oy +358 (0)2 537 11
Finnish Poison Center +358 (0)9 4711

2. HAZARDS IDENTIFICATION

Carc. Cat. 3
 Harmful
 Dangerous for the environment
 Harmful if swallowed.
 Limited evidence of a carcinogenic effect.
 May cause sensitization by inhalation and skin contact.
 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

- 3.1 Hazardous components**
- | 3.1.1 CAS/EINECS and reg. number | EINECS | 3.1.2 Chemical name of the substance | 3.1.3 Concentration | 3.1.4 Classification |
|---|---------------|---|----------------------------|---|
| 10101-97-0 | 232-104-9 | Nickel sulphate hexahydrate | 100 | Carc. Cat. 3; R40; Xn; R22; R42/43; N; R50/53 |
- 3.1.7 Further information**
Substance, inorganic salt (NiSO₄ · 6H₂O)

4. FIRST AID MEASURES

- 4.1 Additional advice**
If symptoms persist, call a physician.



- 4.2 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.
- 4.3 Skin contact**
Wash off with soap and plenty of water. Remove soiled or soaked clothing immediately. Wash contaminated clothing before re-use.
- 4.4 Eye contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.
- 4.5 Ingestion**
Rinse mouth. Consult a physician.

5. FIRE-FIGHTING MEASURES

- 5.1 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; Carbon dioxide (CO₂); Water spray jet;
- 5.2 Extinguishing media which must not be used for safety reasons**
Strong water jet;
- 5.3 Specific hazards**
In the event of fire the following can be released: Metal dust; Metallic oxides; Sulphur oxides (SO_x);
- 5.4 Special protective equipment for firefighters**
Wear self-contained breathing apparatus and protective suit.
- 5.5 Specific methods**
Collect contaminated fire extinguishing water separately. Neutralise with e.g. sodium hydroxide. Do not discharge into the drains/surface waters/groundwater.

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions**
Refer to protective measures listed in sections 7 and 8. Avoid contact with skin, eyes and clothing. Avoid dust formation. Ensure adequate ventilation.
- 6.2 Environmental precautions**
Do not discharge into the drains/surface waters/groundwater. Avoid dust formation.
- 6.3 Methods for cleaning up**
Pick up mechanically. Send in suitable containers for recovery or disposal. (Section 13)

7. HANDLING AND STORAGE

- 7.1 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.
Safe handling advice
Avoid dust formation. Avoid contact with skin and eyes. If workplace exposure limits are exceeded, respiratory protection approved for this particular job must be worn.
Technical measures/Precautions
Provide good ventilation of working area (local exhaust ventilation if necessary).
- 7.2 Storage**



Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances (SEVESO II directive)

Technical measures/Storage conditions

Always keep in containers of same material as the original one. Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible products

Acids;

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure Limit Values

8.1.1 National occupational exposure limits

Nickel and its inorganic compounds (water-soluble nickel compounds) (as Ni)

TWA: 0,1 mg/m³

Can be absorbed through skin.

Capable of respiratory sensitization.

UK Workplace Exposure Limits

8.2 Exposure controls

8.2.1 Occupational exposure controls

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 repeated exposure. Wear suitable protective equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Remove soiled or soaked clothing immediately. Clean skin thoroughly after work. At work do not eat, drink, smoke or take drugs. Keep away from food, drink and animal feedingstuffs. Keep working clothes separately.

8.2.1.1 Respiratory protection

Use a respirator with filter model P3 (DIN 3181).

8.2.1.2 Hand protection

Protective gloves: Rubber; Butyl-rubber; Neoprene; PVC;

8.2.1.3 Eye protection

Goggles; Face-shield;

8.2.1.4 Skin and body protection

Clothing as usual in the chemical industry.

8.2.2 Environmental exposure controls

The employer shall fulfill requirements of IPPC Directive.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 General Information (appearance, odour)

Appearance: Crystalline

Colour: Light green

Odour: Odourless

9.2 Important Health Safety and Environmental Information

9.2.1 pH No data available.

9.2.2 Boiling point/range No data available.

9.2.3 Flash point No data available.

9.2.4 Flammability (solid, gas) No data available.

9.2.5 Explosive properties

9.2.5.1 Lower explosion limit No data available.

9.2.5.2 Upper explosion limit No data available.

9.2.6 Oxidising properties No data available.

9.2.7 Vapour pressure No data available.



9.2.8	Relative density	3,68 g/cm ³
9.2.9	Solubility	
9.2.9.1	Water solubility	625 g/l
9.2.9.2	Fat solubility (solvent - oil to be specified)	No data available.
9.2.10	Partition coefficient (n-octanol/water)	No data available.
9.2.11	Viscosity	No data available.
9.2.12	Vapour density	No data available.
9.2.13	Evaporation rate	No data available.

9.3 Other data

Melting Point / range:

Nickel sulphate hexahydrate changes its crystal form at 53 °C and loses all crystal water at 280 °C. At 848 °C it decomposes to nickel oxide and sulphuric trioxide.

10. STABILITY AND REACTIVITY

- 10.1 Conditions to avoid**
Avoid dust formation.
- 10.2 Materials to avoid**
Acids;
- 10.3 Hazardous decomposition products**
Metallic oxides; Sulphur oxides (SO_x);

11. TOXICOLOGICAL INFORMATION

- 11.1 Acute toxicity**
LD₅₀/oral/rat = 275 mg/kg
- 11.2 Primary irritation**
No data available.
- 11.3 Sensitisation**
May cause sensitization by inhalation and skin contact. May produce an allergic reaction.
- 11.4 Subacute, subchronic and prolonged toxicity**
Carc. Cat. 3
- 11.5 Human experience**
No data available.
- 11.6 Other information of acute toxicity**
No data available.

12. ECOLOGICAL INFORMATION

- 12.1 Ecotoxicity**
- 12.1.1 Aquatic toxicity**
EC₅₀/48h/Salmo gairdneri: 0,26 mg/l
EC₅₀/48h/Asellus aquaticus: 435 mg/l
- 12.1.2 Toxicity to other organisms**
No data available.
- 12.2 Mobility**
No data available.
- 12.3 Persistence and degradability**
- 12.3.1 Biodegradation**
Readily biodegradable : no

**12.3.2 Chemical degradation**

No data available.

12.4 Bioaccumulative potential

No data available.

13. DISPOSAL CONSIDERATIONS

Council Directive 91/689/EEC on hazardous waste.

EWC Waste code 060313 - solid salts and solutions containing heavy metals

The listed waste code numbers, according to the European Waste Catalogue (EWC), are to be understood as a recommendation (2000/532/EC).

13.1 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.

13.2 Waste from residues / unused products

Contact manufacturer. Dispose of as special waste in compliance with local and national regulations.

14. TRANSPORT INFORMATION

14.1	UN-No	<u>3288</u>	
14.2	Packaging group	<u>III</u>	
14.3	Land transport		
14.3.1	Class	<u>6.1</u>	
14.3.2	Risk No.	<u>60</u>	
14.3.3	Description of the goods	<u>UN 3288 - Toxic solid, inorganic, n.o.s. (Nickel sulphate)</u>	
14.4	Sea transport		
14.4.1	IMDG	<u>6.1</u>	
14.4.2	Proper shipping name	<u>UN 3288 - Toxic solid, inorganic, n.o.s. (Nickel sulphate)</u>	
14.4.2.1	Packaging group	<u>III</u>	
14.4.2.2	Marine pollutant	<u>Yes</u>	
14.4.2.4	IMO-Labels	<u>6.1 + Marine pollutant</u>	
14.5	Air transport		
14.5.1	ICAO/IATA	<u>6.1</u>	
14.5.2	Proper shipping name	<u>UN 3288 - Toxic solid, inorganic, n.o.s. (Nickel sulphate)</u>	

15. REGULATORY INFORMATION

Labelling according to Directive 67/548/EEC and 1999/45/EC:

15.1 Information on the warning label**15.1 EC Label****15.1.1 Letter code of the warning symbol and indications of danger for the preparation**

Xn	Harmful
N	Dangerous for the environment

15.1.2 Names of the ingredients given on the warning label:

Nickel sulphate

15.1.3 R phrase(s)

R22	Harmful if swallowed.
R40	Limited evidence of a carcinogenic effect.
R42/43	May cause sensitization by inhalation and skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**15.1.4 S phrase(s)**

S22	Do not breathe dust.
S36/37	Wear suitable protective clothing and gloves.
S60	This material and its container must be disposed of as hazardous waste.
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.

15.2 National regulatory information:

Nickel and nickel compounds are subject to the UK Chemical Hazards Information and Packaging (CHIP 3).

16. OTHER INFORMATION**16.1 Full text of R-phrases referred to under sections 2 and 3**

R22	Harmful if swallowed.
R40	Limited evidence of a carcinogenic effect.
R42/43	May cause sensitization by inhalation and skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

16.4 Additional information available from:

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.

16.5 Literary reference

Finnish Environment Institute: Environmental Properties of Chemicals

Lewis, R. J. : Sax's Dangerous Properties of Industrial Materials

16.6 Additions, Deletions, Revisions

Additions, Deletions, Revisions