SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Nickel(II) nitrate hexahydrate

Creation date	05th September 2019	Version	4.0
Revision date	11th May 2026		

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

1.1. Product identifier — Nickel(II) nitrate hexahydrate

Substance / mixture	substance
Chemical name	Nickel(II) nitrate hexahydrate
CAS number	13478-00-7
EC (EINECS) number	236-068-5

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

Substance's intended use

Chemical production, analytical chemistry, laboratory synthesis, industrial applications.

Substance uses advised against

The product should not be used in ways other than those referred in Section 1.

1.3. Details of the supplier of the safety data sheet

Supplier

Name or trade name	Ing. Petr Švec - PENTA s.r.o.
Address	Radiová 1122/1, Praha 10, 102 00 Czech Republic
Identification number (CRN)	02096013
VAT number	CZ02096013
Phone	+420 226 060 681
Email	info@pentachemicals.eu
Web address	www.pentachemicals.eu

Competent person responsible for the safety data sheet

Name	Ing. Petr Švec - PENTA s.r.o.
Email	info@pentachemicals.eu

1.4. Emergency telephone number

European emergency number: 112 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification of the substance in accordance with Regulation (EC) No 1272/2008

The substance is classified as dangerous.

Ox. Sol. 2, H272
Acute Tox. 4, H302+H332
Skin Irrit. 2, H315
Skin Sens. 1, H317
Eye Dam. 1, H318
Resp. Sens. 1, H334
Muta. 2, H341
Carc. 1A, H350 (inhalation)
Repr. 1B, H360
STOT RE 1, H372
Aquatic Acute 1, H400
Aquatic Chronic 1, H410

Most serious adverse physico-chemical effects

May intensify fire; oxidiser.

Most serious adverse effects on human health and the environment

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer by inhalation. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. Harmful if swallowed or if inhaled. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Nickel(II) nitrate hexahydrate

Creation date	05th September 2019	Version	4.0
Revision date	11th May 2026		

2.2. Label elements

Hazard pictogram

Signal word

Danger

Dangerous substance

Nickel(II) nitrate hexahydrate
(EC: 236-068-5; CAS: 13478-00-7)

Hazard statements

H272	May intensify fire; oxidiser.
H302+H332	Harmful if swallowed or if inhaled.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer if inhaled.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P201	Obtain special instructions before use.
P220	Keep away from clothing and other combustible materials.
P273	Avoid release to the environment.
P280	Wear protective gloves.
P308+P313	IF exposed or concerned: Get medical advice/attention.

Supplemental information

Restricted to professional users.

2.3. Other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended. Does not contain any PMT or vPvM components. Dust may form explosive mixture with air.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Nickel(II) nitrate hexahydrate

Creation date	05th September 2019	Version	4.0
Revision date	11th May 2026		

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical characterization

The substance specified below.

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
	substance main component			
CAS: 13478-00-7 EC: 236-068-5	Nickel(II) nitrate hexahydrate	>99	Ox. Sol. 2, H272 Acute Tox. 4, H302+H332 Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Dam. 1, H318 Resp. Sens. 1, H334 Muta. 2, H341 Carc. 1A, H350 (inhalation) Repr. 1B, H360 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Specific concentration limit: STOT RE 1, H372: C ≥ 1 % STOT RE 2, H373: 0.1 % ≤ C < 1 % Skin Irrit. 2, H315: C ≥ 20 % Skin Sens. 1, H317: C ≥ 0.01 %	

Full text of all classifications and hazard statements is given in the section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

If on skin

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists.

If in eyes

Do not rub your eyes – it could lead to mechanical damage of the cornea. Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.

If swallowed

Rinse out the mouth with clean water. Provide medical treatment. For persons with no symptoms, call the Toxicological Information Centre to decide about the need of medical treatment; provide information about the substances or composition of the product from the original packaging or the Safety Data Sheet of the product.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Nickel(II) nitrate hexahydrate

Creation date	05th September 2019	Version	4.0
Revision date	11th May 2026		

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

If inhaled

Inhaling dust can cause corrosion of the breathing system. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

If on skin

May cause an allergic skin reaction.

If in eyes

Causes serious eye damage.

If swallowed

Corrosion of the digestion system can occur.

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

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

Unsuitable extinguishing media

Water - full jet.

5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

May intensify fire; oxidiser. Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Do not inhale dust. Prevent contact with skin and eyes.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water. Do not allow to enter drains.

6.3. Methods and material for containment and cleaning up

Place the product mechanically in an appropriate manner. Dispose of the collected material according to the instructions in the section 13.

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Do not inhale dust. Prevent contact with skin and eyes. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Wash hands and exposed parts of the body thoroughly after handling. Do not eat, drink or smoke when using this product. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection. Avoid release to the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Store locked up.

7.3. Specific end use(s)

not available

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Nickel(II) nitrate hexahydrate

Creation date	05th September 2019	Version	4.0
Revision date	11th May 2026		

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

none

8.2. Exposure controls

Take off contaminated clothing and wash before reuse. Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

Skin protection

Hand protection: Protective gloves resistant to the product. When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. When selecting gloves, consider the properties of the product and the duration of exposure. Replace gloves at the first signs of wear or damage. Observe other recommendations of the manufacturer. Other protection: Protective antistatic clothing made of natural fibres (cotton) or synthetic fibres resistant to elevated temperatures. Antistatic footwear. Contaminated skin should be washed thoroughly.

Glove material	Thickness	Breakthrough time	Class
Nitrile (NBR)	≥ 0.4 mm	>480 min	6

Respiratory protection

Use a mask with anti-dust filter when the exposition limits of the substances are exceeded or at the place with insufficient ventilation.

Thermal hazard

Not available.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2. Collect spillage.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	solid
Colour	green
Odour	nach Salpetersäure
Melting point/freezing point	56.7 °C
Boiling point or initial boiling point and boiling range	data not available
Flammability	non-inflammable
Lower and upper explosion limit	data not available

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Nickel(II) nitrate hexahydrate

Creation date	05th September 2019	Version	4.0
Revision date	11th May 2026		

Flash point	data not available
Auto-ignition temperature	data not available
Decomposition temperature	data not available
pH	5 (undiluted)
Kinematic viscosity	data not available
Solubility in water	940 g/l
Partition coefficient n-octanol/water (log value)	data not available
Vapour pressure	data not available
Density and/or relative density	
Density	2.05 g/cm³ at 20 °C
Relative vapour density	data not available
Particle characteristics	data not available

9.2. Other information

Oxidising properties: The product has an oxidizing properties.

SECTION 10: Stability and reactivity

10.1. Reactivity

not available

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Unknown.

10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents.

10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

SECTION 11: Toxicological information

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

No toxicological data is available for the substance.

Acute toxicity

Harmful if swallowed or if inhaled.

Nickel(II) nitrate hexahydrate					
Route of exposure	Parameter	Value	Exposure time	Species	Sex
Oral	LD_{50}	1620 mg/kg		Rat (Rattus norvegicus)	

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye damage.

Respiratory or skin sensitisation
May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity
Suspected of causing genetic defects.

Carcinogenicity
May cause cancer by inhalation.

Reproductive toxicity
May damage fertility or the unborn child.

Toxicity for specific target organ - single exposure
No data available for the substance. Based on available data the classification criteria are not met.

Toxicity for specific target organ - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available for the substance. Based on available data the classification criteria are not met.

11.2. Information on other hazards
Endocrine disrupting properties
Based on available data the classification criteria are not met. Does not contain any components that may cause endocrine disruption for humans.
Other information
not available

SECTION 12: Ecological information

12.1. Toxicity
Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability
No data available for the substance.

12.3. Bioaccumulative potential
No data available for the substance.

12.4. Mobility in soil
Based on available data the classification criteria are not met. Does not contain any PMT or vPvM components.

12.5. Results of PBT and vPvB assessment
Based on available data the classification criteria are not met. Does not contain any PBT or vPvB components. Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

12.6. Endocrine disrupting properties
Based on available data the classification criteria are not met. Does not contain any components that may cause endocrine disruption in the environment.

12.7. Other adverse effects
Not available.

SECTION 13: Disposal considerations

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Nickel(II) nitrate hexahydrate

Creation date	05th September 2019	Version	4.0
Revision date	11th May 2026		

13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Perfectly cleaned containers can be submitted for recycling.

Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

SECTION 14: Transport information

14.1. UN number or ID number

UN 2725

14.2. UN proper shipping name

NICKEL NITRATE

14.3. Transport hazard class(es)

5.1 Oxidazing substances

14.4. Packing group

III

14.5. Environmental hazards

not relevant

14.6. Special precautions for user

not available

14.7. Maritime transport in bulk according to IMO instruments

not relevant

Additional information

Hazard identification No.	50
UN number	2725
Classification code	O2
Safety signs	5.1+hazardous for the environment

Tunnel restriction code	(E)

Air transport - ICAO/IATA

Packaging instructions passenger	559
Cargo packaging instructions	563

Marine transport - IMDG

EmS (emergency plan)	F-A, S-Q

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Nickel(II) nitrate hexahydrate

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Revision date	11th May 2026		

SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2. Chemical safety assessment

No chemical safety assessment has been performed for this substance.

No chemical safety assessment has been performed for this substance.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Nickel(II) nitrate hexahydrate

Creation date	05th September 2019	Version	4.0
Revision date	11th May 2026		

No chemical safety assessment has been performed for this substance.

SECTION 16: Other information

A list of standard risk phrases used in the safety data sheet

H272	May intensify fire; oxidiser.
H302+H332	Harmful if swallowed or if inhaled.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer if inhaled.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Nickel(II) nitrate hexahydrate

Creation date	05th September 2019	Version	4.0
Revision date	11th May 2026		

Guidelines for safe handling used in the safety data sheet

P201	Obtain special instructions before use.
P220	Keep away from clothing and other combustible materials.
P273	Avoid release to the environment.
P280	Wear protective gloves.
P308+P313	IF exposed or concerned: Get medical advice/attention.

Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

Acute Tox.	Acute toxicity
ADR	Agreement concerning the international carriage of dangerous goods by road
Aquatic Acute	Hazardous to the aquatic environment
Aquatic Chronic	Hazardous to the aquatic environment (chronic)
BCF	Bioconcentration Factor
Carc.	Carcinogenicity
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EU	European Union
EuPCS	European Product Categorisation System
Eye Dam.	Serious eye damage
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LD_{50}	Lethal dose of a substance in which it can be expected death of 50% of the population
log Kow	Octanol-water partition coefficient
Muta.	Germ cell mutagenicity
OEL	Occupational Exposure Limits
Ox. Sol.	Oxidising solid
PBT	Persistent, bioaccumulative and toxic
PMT	Persistent, mobile and toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.	Reproductive toxicity
Resp. Sens.	Respiratory sensitization
RID	Regulation concerning the International Carriage of Dangerous Goods by Rail
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitization
STOT RE	Specific target organ toxicity - repeated exposure
UN number	Four-figure identification number of the substance or article taken from the UN Model Regulations

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Nickel(II) nitrate hexahydrate

Creation date	05th September 2019	Version	4.0
Revision date	11th May 2026		

UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very persistent and very bioaccumulative
vPvM	Very persistent and very mobile

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

The changes (which information has been added, deleted or modified)

The version 4.0 replaces the SDS version from Monday, 30 September 2024. Changes were made in sections 2, 11, 12, 13, 15 and 16.

More information

Classification procedure - calculation method.

Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.