

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

· **1.1 Product identifier**

· **Trade name:** NICKEL NITRATE SOLUTION

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture**

Production of batteries, zinc electroplating, intermediate in the manufacture of nickel oxide used in catalysis.

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

JINWANG EUROPE

ZI Jean Jaurès

218, Avenue Marie Curie

07800 La Voulte Sur Rhone

France

· **Further information obtainable from:** emilie.bertin@jinwang.eu

· **1.4 Emergency telephone number:**

England and Wales: +44 845 4647

Germany : +49 30 192 40

Austria : +43 1 406 43 43

Belgium : +32 70 245 245

Danemark : +45 82 12 12 12

Spain : +34 156 20420

France : +33 140 054 848

Italy : +39 02 6610 1029

Norway : +47 22 59 13 00

Netherlands : +31 30 274 88 88

Sweden : +46 8 33 12 31

* **SECTION 2: Hazards identification**

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 1A H350i May cause cancer by inhalation.

Repr. 1A H360D May damage the unborn child.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Trade name: NICKEL NITRATE SOLUTION

(Contd. of page 1)

Acute Tox. 4 H332 Harmful if inhaled.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS05 GHS07 GHS08 GHS09

· **Signal word** Danger

· **Hazard-determining components of labelling:**

nickel dinitrate
nitric acid

· **Hazard statements**

H302+H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
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.
H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Additional information:**

Contains nickel dinitrate. May produce an allergic reaction.
Restricted to professional users.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.
· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**



· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 13138-45-9 EINECS: 236-068-5 Reg.nr.: 01-2119492333-38-0012	nickel dinitrate ⚠ Ox. Sol. 2, H272; ⚠ Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1A, H350i; Repr. 1B, H360D; STOT RE 1, H372; ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Irrit. 2, H315; Skin Sens. 1, H317	40-48%
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(Contd. on page 3)

Trade name: NICKEL NITRATE SOLUTION

		(Contd. of page 1)
CAS: 7697-37-2 EINECS: 231-714-2	nitric acid	1-5%
	 Ox. Liq. 3, H272;  Skin Corr. 1A, H314	
CAS: 7732-18-5 EINECS: 231-791-2	water, distilled, conductivity or of similar purity	59%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Do not induce vomiting; call for medical help immediately.
Call for a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NO_x)
Can become oxidant by evaporation of the water contained.
- **5.3 Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

(Contd. on page 4)

Trade name: NICKEL NITRATE SOLUTION

(Contd. of page 1)

See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Keep away from heat and direct sunlight.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Store away from flammable substances.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Recommended storage temperature:** Storage temperature : Room temperature
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

13138-45-9 nickel dinitrate

WEL	Long-term value: 0.1 mg/m ³ as Ni; Sk; Carc; Sen
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7697-37-2 nitric acid

WEL	Short-term value: 2.6 mg/m ³ , 1 ppm
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· **DNELs**

No DNEL defined for Nickel Nitrate.

- NOAEL (No Observable Adverse Effect Level / Maximum dose without toxic effect observed) for sulphate nickel hexahydrate:
- Oral 2.2 mg Ni / kg body weight / day,
- 0.027 mg Ni/m³ inhalation.

· **PNECs**

PNEC water: 3.6 µg / L expressed as dissolved Ni.

PNEC sea water: 8.6 µg / L expressed as dissolved Ni.

- **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the skin.
- Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

(Contd. on page 5)

Trade name: NICKEL NITRATE SOLUTION

(Contd. of page 1)

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:**

Protective work clothing

Use protective suit.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· Form:	Liquid
· Colour:	Green
· Odour:	Pungent

· **pH-value at 20 °C:** 1-5

· **Change in condition**

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	106 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:**

· **Decomposition temperature:** Not determined.

· **Self-igniting:** Not determined.

· **Danger of explosion:** Not determined.

· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Vapour pressure:** Not determined.

· **Density at 20 °C:** 1.40-1.60 g/cm³

(Contd. on page 6)

Trade name: NICKEL NITRATE SOLUTION

(Contd. of page 1)

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|----------------------------------------------------------|--------------------------------------------|
| · Solubility in / Miscibility with water at 0 °C: | 2385 g/l |
| · Partition coefficient (n-octanol/water): | Not determined. |
| · Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Organic solvents: | 0.0 % |
| VOC (EC) | 0.00 % |
| · Solids content: | <50 % |
| · 9.2 Other information | No further relevant information available. |

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
 - Oxidizing materials
 - Reducing agents
- **10.6 Hazardous decomposition products:**
 - Corrosive gases/vapours
 - Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**

· **LD/LC50 values relevant for classification:**

13138-45-9 nickel dinitrate

Oral	LD50	275-360 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Strong irritant with the danger of severe eye injury.
- **Respiratory or skin sensitisation**
 - Sensitisation possible through inhalation.
 - Sensitisation possible through skin contact.
- **Repeated dose toxicity**
 - For Nickel Nitrate: proven risk of serious damage to organs (lung) following repeated exposure or prolonged exposure (inhalation). NOAEC 0.25 mg / m air, NTP National Toxicology Program (1996a)
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
 - Muta. 2, Carc. 1A, Repr. 1A

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.

(Contd. on page 7)

Trade name: NICKEL NITRATE SOLUTION

(Contd. of page 1)

- **Other information:**
 - PNEC water: 3.6 µg Ni / L.
 - PNEC sea water: 8.6 µg Ni / L.
 - PNEC soil: 29.9 mg Ni / kg.
 - PNEC treatment plant effluent organic: 0.33 mg Ni / L
- **12.3 Bioaccumulative potential**
 - Low bioaccumulation potential (McGeer et al. 2003).
 - Chronic M-factor=1
- **12.4 Mobility in soil** Very soluble - compartment ultimate groundwater.
- **Ecotoxicological effects:**
- **Remark:**
 - Very toxic for fish
 - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 - Danger to drinking water if even small quantities leak into the basement.
 - Waters, also toxic to fish and plankton.
- **Additional ecological information:**
- **General notes:**
 - Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
 - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 - Danger to drinking water if even extremely small quantities leak into the ground.
 - Also poisonous for fish and plankton in water bodies.
 - Very toxic for aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
 - Must not be disposed together with household garbage. Do not allow product to reach sewage system.
 - Discharge into drains or the environment prohibited. Waste disposal must be in accordance with the Regulations and Orders Prefectural into force. Although empty contaminated packaging, deliver to an approved disposal.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|---------------------------------------|---------------------------------------------------------------------------------------------|
| · 14.1 UN-Number | |
| · ADR, IMDG, IATA | UN3264 |
| · 14.2 UN proper shipping name | |
| · ADR | 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N. O. S. (NITRIC ACID), ENVIRONMENTALLY HAZARDOUS |
| · IMDG | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), MARINE POLLUTANT |
| · IATA | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID) |

(Contd. on page 8)

Trade name: NICKEL NITRATE SOLUTION

(Contd. of page 1)

· **14.3 Transport hazard class(es)**

· **ADR, IMDG**



· **Class** 8 Corrosive substances.
· **Label** 8

· **IATA**



· **Class** 8 Corrosive substances.
· **Label** 8

· **14.4 Packing group**

· **ADR, IMDG, IATA** II

· **14.5 Environmental hazards:**

· **Marine pollutant:** Yes
Symbol (fish and tree)
· **Special marking (ADR):** Symbol (fish and tree)

· **14.6 Special precautions for user**

· **Danger code (Kemler):** Warning: Corrosive substances.
80
· **EMS Number:** F-A,S-B
· **Segregation groups** Acids

· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**

· **ADR**
· **Limited quantities (LQ)** 1L
· **Transport category** 2
· **Tunnel restriction code** E

· **UN "Model Regulation":**

UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N. O. S. (NITRIC ACID), ENVIRONMENTALLY HAZARDOUS, 8, II

SECTION 15: Regulatory information

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

· **National regulations:**

· **Waterhazard class:** Water hazard class 3 (Self-assessment): extremely hazardous for water.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

(Contd. on page 9)

Trade name: NICKEL NITRATE SOLUTION

(Contd. of page 1)

· **Relevant phrases**

- H272 May intensify fire; oxidiser.
- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H332 Harmful if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- 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.

· **Abbreviations and acronyms:**

- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
- ICAO: International Civil Aviation Organisation
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- DNEL: Derived No-Effect Level (REACH)
- PNEC: Predicted No-Effect Concentration (REACH)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Ox. Liq. 3: Oxidising Liquids, Hazard Category 3
- Ox. Sol. 2: Oxidising Solids, Hazard Category 2
- Acute Tox. 4: Acute toxicity, Hazard Category 4
- Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A
- Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
- Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
- Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
- Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
- Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
- Muta. 2: Germ cell mutagenicity, Hazard Category 2
- Carc. 1A: Carcinogenicity, Hazard Category 1A
- Repr. 1A: Reproductive toxicity, Hazard Category 1A
- Repr. 1B: Reproductive toxicity, Hazard Category 1B
- STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1
- Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1
- Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

· * **Data compared to the previous version altered.**