

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

· **Product identifier**

· **Trade name:** **COBALT NITRATE SOLUTION**

· **Registration number**

Cobalt nitrate (CAS: 10141-05-6 - EC: 233-402-1)

REACH registration number: 01-2119542530-49-0007

· **Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

· **Application of the substance / the preparation** Catalysts, surface treatment, corrosion inhibitors, batteries.

· **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

· **Emergency telephone number:**

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Belgium : +32 70 245 245

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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

2 Hazards identification

· **Classification of the substance or mixture**

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



GHS08 health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 1A H350i May cause cancer by inhalation.

Repr. 1A H360D May damage the unborn child.



GHS05 corrosion

Skin Corr. 1C 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

Skin Sens. 1 H317 May cause an allergic skin reaction.

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



T; Toxic

R49-45-60-61: May cause cancer by inhalation. May cause cancer. May impair fertility. May cause harm to the unborn child.



C; Corrosive

R35: Causes severe burns.



Xn; Harmful

R22-68/20/21/22: Harmful if swallowed. Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.



Xn; Sensitising

R42/43: May cause sensitisation by inhalation and skin contact.



N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

· **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· **Label elements**

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

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

· **Hazard pictograms**



GHS05

GHS08

GHS09

· **Signal word Danger**

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

cobalt dinitrate

· **Hazard statements**

H314 Causes severe skin burns and eye damage.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H350i May cause cancer by inhalation.

H360D May damage the unborn child.

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): Remove/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 or doctor/physician.

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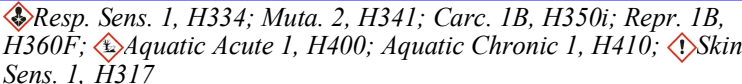
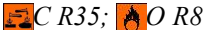

P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**
Restricted to professional users.
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 10141-05-6 EINECS: 233-402-1	cobalt dinitrate  T Repr. Cat. 2 R49-60; Xn R68; Xn R42/43; N R50/53 Carc. Cat. 2, Muta. Cat. 3  Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1B, H350i; Repr. 1B, H360F; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Sens. 1, H317	25-50%
CAS: 7697-37-2 EINECS: 231-714-2	nitric acid  C R35; O R8  Ox. Liq. 3, H272; Skin Corr. 1A, H314	≤2.5%
· SVHC		
10141-05-6	cobalt dinitrate	

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

4 First aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **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. If symptoms persist, consult a doctor.
- **After swallowing:**
Do not induce vomiting; call for medical help immediately.
If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **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
- **Special hazards arising from the substance or mixture** Carbon monoxide (CO)

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- **Advice for firefighters**
- **Protective equipment:**
Mouth respiratory protective device.
No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **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.
- **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.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Keep away from heat and direct sunlight.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **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:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Recommended storage temperature:** Storage temperature : Room temperature
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

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

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

10141-05-6 cobalt dinitrate

WEL Long-term value: 0.1 mg/m³
as Co; Carc

7697-37-2 nitric acid

WEL Short-term value: 2.6 mg/m³, 1 ppm

- **DNELs**
Cobalt nitrate crystals
DNEL worker / long term effects / local / inhalation: 124.2 µg/m
DNEL public / long term effects / local / inhalation: 19.6 µg/m - Oral: 29.5 µg /kg/day
- **PNECs**
Cobalt nitrate crystals
Aquatic compartment: 0.51 µg Co / L

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Marine compartment: 2.36 µg Co / L

Water / sediment: 9.5 mg Co / kg

Marine / sediment: 9.5 mg Co / kg

Earth: 7.9 mg / kg

STEP / micro: 0.37 mg Co / L

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

· **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 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.

· **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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **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.

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Liquid

Colour: Dark red

· **Odour:** Slightly acidic

· **pH-value at 20 °C:** < 2

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· Change in condition Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	107 °C
· Flash point:	Not applicable.
· Ignition temperature:	
Decomposition temperature:	Not determined.
· Self-igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Vapour pressure:	Not determined.
· Density at 20 °C:	1.4-1.6 g/cm ³
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Solvent content: Organic solvents:	0.0 %
VOC (EC)	0.00 %
Solids content:	40.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** Heat
- **Incompatible materials:**
Oxidizing materials
Reducing agents
- **Hazardous decomposition products:**
Nitrogen oxides
Nitrogen oxides (NO_x)

11 Toxicological information

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

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

10141-05-6 cobalt dinitrate

Oral	LD50	691 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritating effect.
- **Sensitization:**
Sensitization possible through inhalation.
Sensitization possible through skin contact.

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· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

Irritant

Carcinogenic if inhaled.

Mutagenicity: may cause genetic defects - Pagano & Zeiger, 1992 and Wing, 1988.

Carcinogenicity: (cobalt nitrate crystals) may cause cancer by inhalation - Bucher et al., 1999; NTP 1998.

Reproductive toxicity: may damage fertility - testing in progress.

· **Repeated dose toxicity**

Oral toxicity (repeated exposure): NOAEL 9.5 µg Co / kg bw / day

Inhalation toxicity (repeated exposure): 0.12 mg NOAEC Co/m³

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

10141-05-6 cobalt dinitrate

CE50 0.61 mg/l (48h) (daphnie)

CI50 0.144 mg/l (algues)

CL50 1.5 mg/l (96h) (Fish)

· **Persistence and degradability** No further relevant information available.

· **Other information:**

NOEC fish (fresh water) = 351.4 µg / L (freshwater) / 31802 µg / L (Sea)

Aquatic invertebrates NOEC = 5.47 µg / L (freshwater) / 206 µg / L (Sea)

NOEL = 4.9 mg algae / L (freshwater) / 1.23 µg / L (Sea)

Sediment NOEC = 86 mg / kg (fresh water)

· **Behaviour in environmental systems:**

· **Bioaccumulative potential**

Does not accumulate in organisms

Cobalt:

- Aquatic plants, the concentration factor > 100 - 5000

- Aquatic invertebrates: HR <300

- Fish: HR <10

· **Mobility in soil** Very soluble - compartment ultimate groundwater.

· **Ecotoxicological effects:**

· **Remark:** Very toxic for fish

· **Additional ecological information:**

· **General notes:**

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

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13 Disposal considerations

- **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.

14 Transport information

· UN-Number · ADR, IMDG, IATA	UN3264
· UN proper shipping name · ADR · IMDG · IATA	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), ENVIRONMENTALLY HAZARDOUS CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), MARINE POLLUTANT CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· Transport hazard class(es) · ADR, IMDG	
	
· Class · Label	8 Corrosive substances. 8
· IATA	
	
· Class · Label	8 Corrosive substances. 8
· Packing group · ADR, IMDG, IATA	II
· Environmental hazards: · Marine pollutant:	Yes Symbol (fish and tree)
· Special marking (ADR):	Symbol (fish and tree)
· Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups	Warning: Corrosive substances. 80 F-A,S-B Acids
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

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· **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

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations:**
- **Waterhazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
- **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

10141-05-6 cobalt dinitrate

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

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.

· **Relevant phrases**

- H272 May intensify fire; oxidiser.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H341 Suspected of causing genetic defects.
- H350i May cause cancer by inhalation.
- H360F May damage fertility.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

- R35 Causes severe burns.
- R42/43 May cause sensitisation by inhalation and skin contact.
- R49 May cause cancer by inhalation.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R60 May impair fertility.
- R68 Possible risk of irreversible effects.
- R8 Contact with combustible material may cause fire.

· **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 Organization
- 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 Harmonized System of Classification and Labelling of Chemicals
- VOC: Volatile Organic Compounds (USA, EU)
- DNEL: Derived No-Effect Level (REACH)
- PNEC: Predicted No-Effect Concentration (REACH)
- LC50: Lethal concentration, 50 percent

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Safety data sheet
according to 1907/2006/EC, Article 31

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Version number 1

Application 01.02.2017

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LD50: Lethal dose, 50 percent

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

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