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

· **Product identifier**

· **Trade name: COBALT NITRATE HEXAHYDRATE**
· **CAS Number:**
10026-22-9
· **EC number:**
233-402-1
· **Index number:**
027-009-00-2
· **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the preparation** Manufacture of catalysts

· **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:**
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

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2 Hazards identification

· **Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**

GHS03 flame over circle

Ox. Sol. 2 H272 May intensify fire; oxidiser.

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 H360 May damage fertility or the unborn child.

GHS05 corrosion

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

(Contd. on page 2)

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

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

T; Toxic
Carc. Cat. 1, Repr. Cat. 1
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: Harmful if swallowed.

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

O; Oxidising
R8: Contact with combustible material may cause fire.

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

Muta. Cat. 3

· **Information concerning particular hazards for human and environment:** Not applicable.

· **Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.
· **Hazard pictograms**

GHS03 GHS05 GHS07 GHS08 GHS09

· **Signal word** Danger

· **Hazard-determining components of labelling:**
Cobalt Nitrate Hexahydrate
· **Hazard statements**
H272 May intensify fire; oxidiser.
H302 Harmful if swallowed.

(Contd. on page 3)

(Contd. of page 1)

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.
H360 May damage fertility or the unborn child.
H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
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.
P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

· **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: Substances**
· **CAS No. Description**
10026-22-9 Cobalt Nitrate Hexahydrate
· **Identification number(s)**
· **EC number:** 233-402-1
· **Index number:** 027-009-00-2

4 First aid measures

· **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:**
If skin irritation continues, consult a doctor.
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.
· **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.

(Contd. on page 4)

Trade name: COBALT NITRATE HEXAHYDRATE

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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** Nitrogen oxides (NOx)
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **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:**
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**
Open and handle receptacle with care.
Keep away from heat and direct sunlight.
Ensure good ventilation/exhaustion at the workplace.
· **Information about fire - and explosion protection:** No special measures required.

· **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:** None.
· **Recommended storage temperature:** Storage temperature : Room temperature
· **Specific end use(s)** No further relevant information available.

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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:** Not required.
· **DNELs**
DNEL worker / long term effects / local / inhalation: 124.2 µg / m
DNEL / public long-term effects / local / inhalation: 19.6 µg / m
· **PNECs**
Behavior water: 0.51 µg / L
Seaworthiness: 2.36 µg Co / L
Water / sediment: 9.5 mg Co / kg
Marine / sediment: 9.5 mg Co / kg
Earth 7.9 mg / kg

(Contd. on page 5)

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STEP / microorganisms: 0.37 µg 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.
· **Respiratory protection:**

Suitable respiratory protective device recommended.

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.
· **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

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Crystalline
Colour:	Red
· **Odour:**	Odourless
· **pH-value:**	Not applicable.
· **Change in condition**	
Melting point/Melting range:	55 °C
Boiling point/Boiling range:	Undetermined.
· **Flash point:**	Not applicable.

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· **Flammability (solid, gaseous):**	Contact with combustible material may cause fire.
· **Ignition temperature:**	
Decomposition temperature:	Not determined.
· **Self-igniting:**	Not determined.
· **Danger of explosion:**	Not determined.
· **Density at 20 °C:**	1.88 g/cm³
· **Solubility in / Miscibility with water at 0 °C:**	1338 g/l
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Solvent content:**	
Organic solvents:	0.0 %
VOC (EC)	0.00 %
Solids content:	100.0 %
· **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
Combustible substances
Organic Products
· **Hazardous decomposition products:** Nitrogen oxides (NOx)

11 Toxicological information

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

· **LD/LC50 values relevant for classification:**		
10026-22-9 Nitrate de Cobalt Hexahydrate		
Oral	LD50	691 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:**
Sensitization possible through inhalation.
Sensitization possible through skin contact.
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
Muta. 2, Carc. 1A, Repr. 1A

(Contd. on page 7)

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12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
10026-22-9 Cobalt Nitrate Hexahydrate	
CE50	0.00061 mg/l (48h) (daphnie)
CI50	0.144 mg/l (algues)
CL50	0.0015 mg/l (96h) (Fish)

· **Persistence and degradability** No further relevant information available.
· **Other information:**
NOEL fish = 351.4 mg / L
Aquatic invertebrates NOEL = 5.47 µg / L
NOEL = 4.9 µg algae / L
· **Behaviour in environmental systems:**
· **Bioaccumulative potential**
Not worth-mentioning accumulating in organisms
cobalt:
- Aquatic plants, concentration factor> 100 - 5000
- Aquatic invertebrates: FC <300
- Fish: FC <10
· **Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Very toxic for fish
· **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
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

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.
· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

· **UN-Number**
· **ADR, IMDG, IATA** UN1477

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· **UN proper shipping name**	
· **ADR**	1477 NITRATES, INORGANIC, N.O.S. (Nitrate de Cobalt Hexahydrate), ENVIRONMENTALLY HAZARDOUS
· **IMDG**	NITRATES, INORGANIC, N.O.S., MARINE POLLUTANT
· **IATA**	NITRATES, INORGANIC, N.O.S.
· **Transport hazard class(es)**	
· **ADR, IMDG**	
· **Class**	5.1 Oxidising substances.
· **Label**	5.1
· **IATA**	
· **Class**	5.1 Oxidising substances.
· **Label**	5.1
· **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**	Warning: Oxidising substances.
· **Danger code (Kemler):**	50
· **EMS Number:**	F-A,S-Q
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	1 kg
· **Transport category**	2
· **Tunnel restriction code**	E
· **UN "Model Regulation":**	UN1477, NITRATES, INORGANIC, N.O.S. (Nitrate de Cobalt Hexahydrate), ENVIRONMENTALLY HAZARDOUS, 5.1, II

15 Regulatory information

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

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

Printing date 01.02.2017 *Version number 1* *Application 01.02.2017*

Trade name: COBALT NITRATE HEXAHYDRATE

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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.

· ***Abbreviations and acronyms:***
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
EINECS: European Inventory of Existing Commercial 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

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