

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Cobalt(II) nitrate hexahydrate for analysis, Reag. Ph. Eur.

Revision date: 20.05.2022

Product code: 27524

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

### 1.1. Product identifier

Cobalt(II) nitrate hexahydrate for analysis, Reag. Ph. Eur.

Substance name: cobalt (II) nitrate hexahydrate  
REACH Registration Number: 01-2119542530-49-XXXX  
CAS No: 10026-22-9  
Index No: 027-009-00-2  
EC No: 233-402-1

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

#### Use of the substance/mixture

Laboratory chemicals  
Industrial uses: Uses of substances as such or in preparations at industrial sites  
Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

### 1.3. Details of the supplier of the safety data sheet

Company name: Fa. Bernd Kraft GmbH  
Street: Stempelstraße 6  
Place: D-47167 Duisburg  
Telephone: 0203/5194-0  
e-mail: info@berndkraft.de  
Contact person: Abteilung Produktsicherheit  
e-mail: produktsicherheit@berndkraft.de  
Internet: www.berndkraft.de  
Responsible Department: Abteilung Produktsicherheit  
Telefax: 0203/5194-290  
Telephone: 0203/5194-107/117

### 1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

### Further Information

A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No 1272/2008

Ox. Sol. 2; H272  
Carc. 1B; H350i  
Muta. 2; H341  
Repr. 1B; H360F  
Acute Tox. 4; H302  
Eye Dam. 1; H318  
Resp. Sens. 1; H334  
Skin Sens. 1; H317  
Aquatic Acute 1; H400 (M-Factor = 10)  
Aquatic Chronic 1; H410 (M-Factor = 10)

Full text of hazard statements: see SECTION 16.

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**2.2. Label elements**

Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:



**Hazard statements**

- H272 May intensify fire; oxidiser.
- H302 Harmful if swallowed.
- 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.
- H350i May cause cancer by inhalation.
- H360F May damage fertility.
- H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

- P201 Obtain special instructions before use.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P310 Immediately call a POISON CENTER/doctor.
- P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

**Special labelling of certain mixtures**

Restricted to professional users.

**2.3. Other hazards**

No data available

**SECTION 3: Composition/information on ingredients**

**3.1. Substances**

Sum formula:  $\text{Co}(\text{NO}_3)_2 \cdot 6 \text{H}_2\text{O}$

Molecular weight: 291,04 g/mol

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
10026-22-9	cobalt (II) nitrate hexahydrate			100 %
	233-402-1	027-009-00-2	01-2119542530-49-XXXX	
	Ox. Sol. 2, Carc. 1B, Muta. 2, Repr. 1B, Acute Tox. 4, Eye Dam. 1, Resp. Sens. 1, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1; H272 H350i H341 H360F H302 H318 H334 H317 H400 H410			

Full text of H and EUH statements: see section 16.

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**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
10026-22-9	233-402-1	cobalt (II) nitrate hexahydrate	100 %
		dermal: LD50 = > 2000 mg/kg; oral: LD50 = 691 mg/kg Carc. 1B; H350i: >= 0,01 - 100 M acute; H400: M=10 M chron.; H410: M=10	

**Further Information**

This substance has been listed as SVHC (substance of very high concern) in the Candidate List according to Article 59 of REACH.

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

Self-protection of the first aider

**After inhalation**

Provide fresh air.

If breathing is irregular or stopped, administer artificial respiration.

Call a physician immediately.

**After contact with skin**

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

Call a physician immediately.

**After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Remove contact lenses, if present and easy to do. Continue rinsing.

Protect uninjured eye.

**After ingestion**

Rinse mouth immediately and drink plenty of water.

Call a physician immediately.

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

Allergic reactions

Agitation

Spasms

Methaemoglobinaemia

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

No data available

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

no restriction

**5.2. Special hazards arising from the substance or mixture**

Non-combustible solids

Hazardous combustion products

In case of fire may be liberated:

Metal oxide smoke, toxic

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Nitrogen oxides (NOx)

**5.3. Advice for firefighters**

- Do not inhale explosion and combustion gases.
- Avoid contact with skin, eyes and clothes.
- In case of fire: Wear self-contained breathing apparatus.

**Additional information**

- Suppress gases/vapours/mists with water spray jet.
- Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
- Move undamaged containers from immediate hazard area if it can be done safely.
- Use water spray jet to protect personnel and to cool endangered containers.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**

- Provide adequate ventilation.
- Use personal protection equipment.
- Avoid contact with skin, eyes and clothes.
- Remove persons to safety.
- Emergency procedures
- Do not breathe dust/fume/gas/mist/vapours/spray.

**For emergency responders**

- Precautionary statements For emergency responders : Personal protection equipment: see section 8

**6.2. Environmental precautions**

- Do not allow to enter into surface water or drains.

**6.3. Methods and material for containment and cleaning up**

**For containment**

- Cover drains.
- Prevent spread over a wide area (e.g. by containment or oil barriers).
- Collect in closed and suitable containers for disposal.
- Take up carefully when dry. Take up dust-free and set down dust-free.

**For cleaning up**

- Clean contaminated articles and floor according to the environmental legislation.

**Other information**

- Provide adequate ventilation.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**6.4. Reference to other sections**

- Safe handling: see section 7
- Personal protection equipment: see section 8
- Disposal: see section 13

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Advice on safe handling**

- Avoid exposure - obtain special instructions before use.
- Read label before use. Handle and open container with care.
- Avoid dust formation. Do not breathe dust.
- When using do not eat, drink, smoke, sniff. Keep container tightly closed.
- Use personal protection equipment. Use extractor hood (laboratory).
- Provide adequate ventilation. Avoid contact with skin, eyes and clothes.

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**Advice on protection against fire and explosion**

Usual measures for fire prevention.

**Advice on general occupational hygiene**

Keep away from food, drink and animal feedingstuffs. Make available sufficient washing facilities  
Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.  
Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

**Further information on handling**

Draw up and observe skin protection programme.  
Wash hands and face before breaks and after work and take a shower if necessary.  
Take off immediately all contaminated clothing and wash it before reuse.  
If handled uncovered, arrangements with local exhaust ventilation have to be used.

**7.2. Conditions for safe storage, including any incompatibilities**

**Requirements for storage rooms and vessels**

Store in a well-ventilated place. Keep container tightly closed.  
Store in a place accessible by authorized persons only.

**Further information on storage conditions**

Store in a dry place.  
storage temperature +5°C - +30°C

**7.3. Specific end use(s)**

Laboratory chemicals

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
10026-22-9	cobalt (II) nitrate hexahydrate			
Consumer DNEL, long-term		oral	systemic	0,093 mg/kg bw/day

**PNEC values**

CAS No	Substance	Value
10026-22-9	cobalt (II) nitrate hexahydrate	
Environmental compartment		
Freshwater		0,00062 mg/l
Marine water		0,00236 mg/l
Freshwater sediment		53,8 mg/kg
Marine sediment		69,8 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,37 mg/l
Soil		10,9 mg/kg

**8.2. Exposure controls**

**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.  
If handled uncovered, arrangements with local exhaust ventilation have to be used.  
Avoid dust formation. Do not breathe dust.

**Individual protection measures, such as personal protective equipment**

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**Eye/face protection**

goggles  
Wear eye/face protection.

**Hand protection**

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact  
Trade name/designation KCL 741 Dermatril® L  
Suitable material: NBR (Nitrile rubber) 0,11 mm  
Wearing time with permanent contact: > 480 min

By short-term hand contact  
Trade name/designation KCL 741 Dermatril® L  
Suitable material: NBR (Nitrile rubber) 0,11 mm  
Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

**Skin protection**

Wear suitable protective clothing. Chemical protection clothing  
Take off immediately all contaminated clothing.  
Wash hands before breaks and after work.

**Respiratory protection**

Wear breathing apparatus if exposed to vapours/dusts/aerosols.  
Filtering device with filter or ventilator filtering device of type: P3

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**SECTION 9: Physical and chemical properties**

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

Physical state:	solid
Colour:	red brown
Odour:	No data available
Odour threshold:	No data available

**Changes in the physical state**

Melting point/freezing point:	57 °C
Boiling point or initial boiling point and boiling range:	No data available
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
No data available:	
Flash point:	No data available

**Flammability**

Solid/liquid:	No data available
Gas:	No data available

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**Explosive properties**

No data available

Lower explosion limits:

No data available

Upper explosion limits:

No data available

Auto-ignition temperature:

No data available

**Self-ignition temperature**

Solid:

No data available

Gas:

No data available

Decomposition temperature:

>74 °C

pH-Value (at 20 °C):

~4,0 (100 g/l)

Viscosity / dynamic:

No data available

Viscosity / kinematic:

No data available

Flow time:

No data available

Water solubility:

2170 g/L

(at 100 °C)

**Solubility in other solvents**

No data available

Dissolution rate:

No data available

Partition coefficient n-octanol/water:

No data available

Vapour pressure:

No data available

Vapour pressure:

No data available

Density (at 20 °C):

1,87 g/cm<sup>3</sup>

Relative density:

No data available

Bulk density:

800 kg/m<sup>3</sup>

Relative vapour density:

No data available

Particle characteristics:

No data available

**9.2. Other information**

**Information with regard to physical hazard classes**

Sustaining combustion:

No data available

Oxidizing properties

No data available

**Other safety characteristics**

Solvent separation test:

No data available

Solvent content:

0

Solid content:

100%

Evaporation rate:

No data available

**Further Information**

No data available

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No data available

**10.2. Chemical stability**

Protect against: Humidity

**10.3. Possibility of hazardous reactions**

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coal  
carbon black

**10.4. Conditions to avoid**

Humidity

**10.5. Incompatible materials**

No data available

**10.6. Hazardous decomposition products**

In case of fire may be liberated:  
SECTION 5: Firefighting measures

**Further information**

No data available

**SECTION 11: Toxicological information**

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

**Toxicokinetics, metabolism and distribution**

No data available

**Acute toxicity**

Harmful if swallowed.

CAS No	Chemical name					
	Exposure route	Dose	Species	Source	Method	
10026-22-9	cobalt (II) nitrate hexahydrate					
	oral	LD50 mg/kg	691	Rat	Fd Chem. Toxic, Vol. 20:311-314. (1982)	OECD Guideline 401
	dermal	LD50 mg/kg	> 2000	Rat	Study report (2007)	OECD Guideline 402

**Irritation and corrosivity**

Causes serious eye damage.  
Skin corrosion/irritation: Based on available data, the classification criteria are not met.

**Sensitising effects**

May cause allergy or asthma symptoms or breathing difficulties if inhaled. (cobalt (II) nitrate hexahydrate)  
May cause an allergic skin reaction. (cobalt (II) nitrate hexahydrate)

**Carcinogenic/mutagenic/toxic effects for reproduction**

Suspected of causing genetic defects. (cobalt (II) nitrate hexahydrate)  
May cause cancer by inhalation. (cobalt (II) nitrate hexahydrate)  
May damage fertility. (cobalt (II) nitrate hexahydrate)

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Information on likely routes of exposure**

No data available

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

No data available



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**Practical experience**

No data available

**11.2. Information on other hazards**

**Endocrine disrupting properties**

No data available

**Other information**

No data available

**Further information**

Allergic reactions

Agitation

Spasms

Methaemoglobinaemia

**SECTION 12: Ecological information**

**12.1. Toxicity**

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
10026-22-9	cobalt (II) nitrate hexahydrate					
	Acute fish toxicity	LC50 mg/l	54,1	96 h	Pimephales promelas	Study report (2009) other: ASTM guideline
	Acute algae toxicity	ErC50 mg/l	71,314	96 h	Dunaliella tertiolecta	Study report (2010) other: American Society for Testing and
	Acute crustacea toxicity	EC50 mg/l	42,7	48 h	Aeolosoma sp.	Study report (2008) Newman, J.P., Jr. 1975. The effects of h
	Fish toxicity	NOEC mg/l	0,21	34 d	Pimephales promelas	Study report (2009) other: This study was conducted accordin
	Algae toxicity	NOEC mg/l	0,0018	7 d	Champia parvula	Study report - model refit from original other: EPA 821-R- 02-014, Method 1009.0
	Crustacea toxicity	NOEC mg/l	0,1697	14 d	Aeolosoma sp.	Study report (2008) other: Newman, J.P., Jr. 1975. The effec
	Acute bacteria toxicity	(EC50 mg/l)	120	0,5 h	Activated sludge	Study report (2010) OECD Guideline 209

**12.2. Persistence and degradability**

No data available

**12.3. Bioaccumulative potential**

No data available

**BCF**

CAS No	Chemical name	BCF	Species	Source
10026-22-9	cobalt (II) nitrate hexahydrate	23	Asterias rubens	Marine Pollution Bul

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

No data available

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**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

No data available

**12.7. Other adverse effects**

No data available

**Further information**

Do not allow to enter into surface water or drains.

Discharge into the environment must be avoided.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Dispose of waste according to applicable legislation.

Do not allow to enter into surface water or drains.

Send to a hazardous waste incinerator facility under observation of official regulations. Special monitoring requiring wastes.

**Contaminated packaging**

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

<b>14.1. UN number or ID number:</b>	UN 1477
<b>14.2. UN proper shipping name:</b>	NITRATES, INORGANIC, N.O.S.
<b>14.3. Transport hazard class(es):</b>	5.1
<b>14.4. Packing group:</b>	II
Hazard label:	5.1
Classification code:	O2
Special Provisions:	511
Limited quantity:	1 kg
Excepted quantity:	E2
Transport category:	2
Hazard No:	50
Tunnel restriction code:	E

**Inland waterways transport (ADN)**

<b>14.1. UN number or ID number:</b>	UN 1477
<b>14.2. UN proper shipping name:</b>	NITRATES, INORGANIC, N.O.S.
<b>14.3. Transport hazard class(es):</b>	5.1
<b>14.4. Packing group:</b>	II
Hazard label:	5.1
Classification code:	O2
Special Provisions:	511
Limited quantity:	1 kg
Excepted quantity:	E2

**Marine transport (IMDG)**

<b>14.1. UN number or ID number:</b>	UN 1477
<b>14.2. UN proper shipping name:</b>	NITRATES, INORGANIC, N.O.S.
<b>14.3. Transport hazard class(es):</b>	5.1
<b>14.4. Packing group:</b>	II

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Hazard label: 5.1  
Special Provisions: -  
Limited quantity: 1 kg  
Excepted quantity: E2  
EmS: F-A, S-Q

**Air transport (ICAO-TI/IATA-DGR)**

**14.1. UN number or ID number:** UN 1477  
**14.2. UN proper shipping name:** NITRATES, INORGANIC, N.O.S.  
**14.3. Transport hazard class(es):** 5.1  
**14.4. Packing group:** II  
Hazard label: 5.1  
Special Provisions: A3 A803  
Limited quantity Passenger: 2.5 kg  
Passenger LQ: Y544  
Excepted quantity: E2  
IATA-packing instructions - Passenger: 558  
IATA-max. quantity - Passenger: 5 kg  
IATA-packing instructions - Cargo: 562  
IATA-max. quantity - Cargo: 25 kg

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: Yes  
Danger releasing substance: Cobalt dinitrate

**SECTION 15: Regulatory information**

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

**EU regulatory information**

Authorisations (REACH, annex XIV):  
This substance has been listed as SVHC (substance of very high concern) in the Candidate List according to Article 59 of REACH.

Information according to 2012/18/EU (SEVESO III): E1 Hazardous to the Aquatic Environment

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe employment restrictions for women of child-bearing age.

Water hazard class (D): 3 - highly hazardous to water

**SECTION 16: Other information**

**Changes**

This data sheet contains changes from the previous version in section(s): 2,7,14.

**Relevant H and EUH statements (number and full text)**

H272 May intensify fire; oxidiser.  
H302 Harmful if swallowed.  
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.  
H350i May cause cancer by inhalation.  
H360F May damage fertility.

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H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

#### Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.  
The receiver of our product is singularly responsible for adhering to existing laws and regulations.