

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Cobalt(II) chloride hexahydrate ROTI®METIC 99,999 % (5N)

article number: **1L57**
Version: **2.0 en**
Replaces version of: 2021-08-09
Version: (1)

date of compilation: 2021-08-09
Revision: 2022-12-13

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

1.1 Product identifier

| | |
|---------------------------------|---|
| Identification of the substance | Cobalt(II) chloride hexahydrate ROTI®METIC 99,999 % (5N) |
| Article number | 1L57 |
| EC number | 616-574-6 |
| CAS number | 7791-13-1 |

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

| | |
|---------------------------|---|
| Relevant identified uses: | Laboratory chemical Laboratory and analytical use |
| Uses advised against: | Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household). |

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone:+49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet: :Department Health, Safety and Environment

e-mail (competent person): **sicherheit@carlroth.de**

1.4 Emergency telephone number

| Name | Street | Postal code/city | Telephone | Website |
|---|-----------|----------------------|--------------|---------|
| National Poisons Information Service City Hospital | Dudley Rd | B187QH Birmingham | 844 892 0111 | |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

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| Section | Hazard class | Cat-egory | Hazard class and category | Hazard statement |
|---------|---|-----------|---------------------------|------------------|
| 3.1O | Acute toxicity (oral) | 4 | Acute Tox. 4 | H302 |
| 3.4R | Respiratory sensitisation | 1 | Resp. Sens. 1 | H334 |
| 3.4S | Skin sensitisation | 1 | Skin Sens. 1 | H317 |
| 3.5 | Germ cell mutagenicity | 2 | Muta. 2 | H341 |
| 3.6 | Carcinogenicity | 1B | Carc. 1B | H350i |
| 3.7 | Reproductive toxicity | 1B | Repr. 1B | H360F |
| 4.1A | Hazardous to the aquatic environment - acute hazard | 1 | Aquatic Acute 1 | H400 |
| 4.1C | Hazardous to the aquatic environment - chronic hazard | 1 | Aquatic Chronic 1 | H410 |

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling

Signal word

Danger

Pictograms

GHS07, GHS08,
GHS09



Hazard statements

| | |
|-------|---|
| H302 | Harmful if swallowed |
| 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 (if exposed) |
| H350i | May cause cancer by inhalation |
| H360F | May damage fertility (if exposed) |
| H410 | Very toxic to aquatic life with long lasting effects |

Precautionary statements

Precautionary statements - prevention

| | |
|------|---|
| P201 | Obtain special instructions before use |
| P260 | Do not breathe dust |
| P273 | Avoid release to the environment |
| P280 | Wear protective gloves/eye protection/face protection |

Precautionary statements - response

| | |
|-----------|---|
| P308+P313 | IF exposed or concerned: Get medical advice/attention |
|-----------|---|

For professional users only

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2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|-------------------|--|
| Name of substance | Cobalt(II) chloride hexahydrate |
| Molecular formula | CoCl ₂ · 6 H ₂ O |
| Molar mass | 237,9 g/mol |
| CAS No | 7791-13-1 |
| EC No | 616-574-6 |

Substance of Very High Concern (SVHC)

| Name of substance | CAS No | EC No | Listed in | Remarks |
|---------------------------------|-----------|-----------|----------------|--------------------------|
| Cobalt(II) chloride hexahydrate | 7646-79-9 | 231-589-4 | Candidate list | Carc. A57a Repr. A57c |

Legend

candidate list Substances meeting the criteria referred to in Article 57 and for eventual inclusion in Annex XIV
Carc. A57a Carcinogenic (article 57a)
Repr. A57c Toxic for reproduction (article 57c)

Substance, Specific Conc. Limits, M-factors, ATE

| Specific Conc. Limits | M-Factors | ATE | Exposure route |
|-----------------------------|--|-----------|----------------|
| Carc. 1B; H350i: C ≥ 0,01 % | M-factor (acute) = 10 M-factor (chronic) = 10 | 418 mg/kg | oral |

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. After contact with skin, wash immediately with plenty of water. In case of skin reactions, consult a physician.

Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

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Following ingestion

Rinse mouth with water (only if the person is conscious). In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Call a doctor.

4.2 Most important symptoms and effects, both acute and delayed

Vomiting, Allergic reactions, Cough, Dyspnoea

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings
water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Non-combustible.

Hazardous combustion products

In case of fire may be liberated:

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Do not breathe dust.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically.

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Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use extractor hood (laboratory). Provision of sufficient ventilation. Avoid exposure. Avoid dust formation.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place. Hygroscopic solid.

Incompatible substances or mixtures

Observe hints for combined storage.

Protect against external exposure, such as

humidity

Consideration of other advice:

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

| Country | Name of agent | CAS No | Identifier | TWA [mg/m ³] | STEL [mg/m ³] | Ceiling-C [mg/m ³] | Notation | Source |
|---------|------------------|--------|------------|--------------------------|---------------------------|--------------------------------|----------|-----------|
| GB | cobalt compounds | | WEL | 0,1 | | | Co | EH40/2005 |

Notation

| | |
|-----------|--|
| Ceiling-C | Ceiling value is a limit value above which exposure should not occur |
| Co | Calculated as Co (cobalt) |
| STEL | Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified) |
| TWA | Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified) |

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Human health values

| Relevant DNELs and other threshold levels | | | | |
|---|------------------------|------------------------------------|-------------------|-------------------------|
| Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| DNEL | 88,1 µg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |

Environmental values

| Relevant PNECs and other threshold levels | | | | |
|---|-----------------|-----------------------|------------------------------|------------------------------|
| End-point | Threshold level | Organism | Environmental compartment | Exposure time |
| PNEC | 0,62 µg/l | aquatic organisms | freshwater | short-term (single instance) |
| PNEC | 2,36 µg/l | aquatic organisms | marine water | short-term (single instance) |
| PNEC | 0,37 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| PNEC | 53,8 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| PNEC | 69,8 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| PNEC | 10,9 mg/kg | terrestrial organisms | soil | short-term (single instance) |

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection.

Skin protection



• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 °C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

NBR (Nitrile rubber)

• material thickness

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>0,11 mm

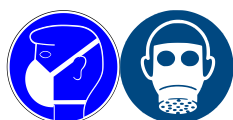
- **breakthrough times of the glove material**

>480 minutes (permeation: level 6)

- **other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|--|
| Physical state | solid |
| Form | crystalline |
| Colour | pink |
| Odour | odourless |
| Melting point/freezing point | >86 °C (Release of crystal water) |
| Boiling point or initial boiling point and boiling range | 1.049 °C at 101,3 kPa (anhydrous) (ECHA) |
| Flammability | non-combustible |
| Lower and upper explosion limit | not determined |
| Flash point | not applicable |
| Auto-ignition temperature | not determined |
| Decomposition temperature | not relevant |
| pH (value) | 4,9 (in aqueous solution: 50 g/l, 25 °C) |
| Kinematic viscosity | not relevant |
| <u>Solubility(ies)</u> | |
| Water solubility | 970 g/l at 20 °C |
| <u>Partition coefficient</u> | |
| Partition coefficient n-octanol/water (log value): | not relevant (inorganic) |
| Vapour pressure | not determined |

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Density and/or relative density

| | |
|--------------------------|---|
| Density | 1,92 g/cm ³ at 25 °C |
| Relative vapour density | information on this property is not available |
| Bulk density | ~1.250 kg/m ³ |
| Particle characteristics | No data available. |

Other safety parameters

Oxidising properties none

9.2 Other information

| | |
|---|---|
| Information with regard to physical hazard classes: | hazard classes acc. to GHS (physical hazards): not relevant |
| Other safety characteristics: | There is no additional information. |

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: Alkali metals

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Harmful if swallowed.

GHS of the United Nations, annex 4. May be harmful in contact with skin.

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| Acute toxicity | | | | | |
|----------------|----------|--------------|---------|-----------|--------|
| Exposure route | Endpoint | Value | Species | Method | Source |
| oral | LD50 | 418 mg/kg | rat | anhydrous | ECHA |
| dermal | LD50 | >2.000 mg/kg | rat | anhydrous | TOXNET |

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

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

Germ cell mutagenicity

Suspected of causing genetic defects (if exposed).

Carcinogenicity

May cause cancer by inhalation.

Reproductive toxicity

May damage fertility (if exposed).

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

Data are not available.

• If in eyes

Data are not available.

• If inhaled

May produce an allergic reaction, cough, Dyspnoea

• If on skin

May produce an allergic reaction, pruritis, localised redness

• Other information

none

11.2 Endocrine disrupting properties

Not listed.

11.3 Information on other hazards

There is no additional information.

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SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

| Aquatic toxicity (acute) | | | | |
|--------------------------|------------|-----------------------|--------|---------------|
| Endpoint | Value | Species | Source | Exposure time |
| LC50 | 1.866 µg/l | fish | ECHA | 96 h |
| EC50 | 241 µg/l | aquatic invertebrates | ECHA | 48 h |
| ErC50 | 95,2 µg/l | algae | ECHA | 72 h |

| Aquatic toxicity (chronic) | | | | |
|----------------------------|-----------|-----------------------|--------|---------------|
| Endpoint | Value | Species | Source | Exposure time |
| EC50 | 82,2 µg/l | aquatic invertebrates | ECHA | 21 d |
| EC50 | 24,1 µg/l | algae | ECHA | 7 d |

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

| | |
|-----|-----------|
| BCF | 23 (ECHA) |
|-----|-----------|

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Not listed.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

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Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

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

Properties of waste which render it hazardous

- HP 6 acute toxicity
- HP 7 carcinogenic
- HP 10 toxic for reproduction
- HP 11 mutagenic
- HP 13 sensitising
- HP 14 ecotoxic

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number or ID number

| | |
|-----------|---------|
| ADRRID | UN 3077 |
| IMDG-Code | UN 3077 |
| ICAO-TI | UN 3077 |

14.2 UN proper shipping name

| | |
|----------------|--|
| ADRRID | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| IMDG-Code | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| ICAO-TI | Environmentally hazardous substance, solid, n.o.s. |
| Technical name | Cobalt(II) chloride hexahydrate |

14.3 Transport hazard class(es)

| | |
|-----------|---|
| ADRRID | 9 |
| IMDG-Code | 9 |
| ICAO-TI | 9 |

14.4 Packing group

| | |
|-----------|-----|
| ADRRID | III |
| IMDG-Code | III |
| ICAO-TI | III |

14.5 Environmental hazards

hazardous to the aquatic environment

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

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14.7 Maritime transport in bulk according to IMO instruments



The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) Additional information

| | |
|---|--|
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| Particulars in the transport document | UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Cobalt(II) chloride hexahydrate), 9, III, (-) |
| Classification code | M7 |
| Danger label(s) | 9, "Fish and tree" |
|   | |
| Environmental hazards | yes (hazardous to the aquatic environment) |
| Special provisions (SP) | 274, 335, 375, 601 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 kg |
| Transport category (TC) | 3 |
| Tunnel restriction code (TRC) | - |
| Hazard identification No | 90 |
| Emergency Action Code | 2Z |

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) Additional information

| | |
|---|---------------------------|
| Classification code | M7 |
| Danger label(s) | 9 Fish and tree |
|   | |
| Environmental hazards | Yes Hazardous to water |
| Special provisions (SP) | 274, 335, 375, 601 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 kg |
| Transport category (TC) | 3 |
| Hazard identification No | 90 |

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International Maritime Dangerous Goods Code (IMDG) - Additional information

| | |
|---|---|
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| Particulars in the shipper's declaration | UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Cobalt(II) chloride hexahydrate), 9, III |
| Marine pollutant | YES (hazardous to the aquatic environment), (Cobalt(II) chloride hexahydrate) |
| Danger label(s) | 9, "Fish and tree" |
|   | |
| Special provisions (SP) | 274, 335, 966, 967, 969 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 kg |
| EmS | F-A, S-F |
| Stowage category | A |

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

| | |
|---|---|
| Proper shipping name | Environmentally hazardous substance, solid, n.o.s. |
| Particulars in the shipper's declaration | UN3077, Environmentally hazardous substance, solid, n.o.s., (Cobalt(II) chloride hexahydrate), 9, III |
| Environmental hazards | YES (hazardous to the aquatic environment) |
| Danger label(s) | 9, "Fish and tree" |
|   | |
| Special provisions (SP) | A97, A158, A179, A197, A215 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 30 kg |

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Seveso Directive

| 2012/18/EU (Seveso III) | | | |
|-------------------------|--|---|-------|
| No | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
| E1 | environmental hazards (hazardous to the aquatic environment, cat. 1) | 100 200 | 56) |

Notation

56) Hazardous to the Aquatic Environment in category Acute 1 or Chronic 1

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Deco-Paint Directive

| | |
|-------------|--------------|
| VOC content | 0 % 0 g/l |
|-------------|--------------|

Industrial Emissions Directive (IED)

| | |
|-------------|-------|
| VOC content | 0 % |
| VOC content | 0 g/l |

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Water Framework Directive (WFD)

| List of pollutants (WFD) | | | | |
|---------------------------------|---|--------|-----------|---------|
| Name of substance | Name acc. to inventory | CAS No | Listed in | Remarks |
| Cobalt(II) chloride hexahydrate | Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment | | a) | |
| Cobalt(II) chloride hexahydrate | Metals and their compounds | | a) | |

Legend

A) Indicative list of the main pollutants

Regulation on the marketing and use of explosives precursors

not listed

Regulation on drug precursors

not listed

Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

not listed

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National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

| Substance of Very High Concern (SVHC) acc. to GB REACH and HSE | | | |
|--|-----------|----------------|--------------------------|
| Name of substance | CAS No | Listed in | Remarks |
| Cobalt(II) chloride hexahydrate | 7646-79-9 | Candidate list | Carc. A57a Repr. A57c |

Legend

candidate list Substances meeting the criteria referred to in Article 57 and for eventual inclusion in Annex XIV
Carc. A57a Carcinogenic (Article 57a)
Repr. A57c Toxic for reproduction (Article 57c)

Restrictions according to GB REACH, Annex 17

| Dangerous substances with restrictions (GB REACH, Annex 17) | | | |
|---|------------------------|--------|----|
| Name of substance | Name acc. to inventory | CAS No | No |
| Cobalt(II) chloride hexahydrate | carcinogenic | | 28 |
| Cobalt(II) chloride hexahydrate | toxic for reproduction | | 30 |

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National inventories

| Country | Inventory | Status |
|---------|------------|---------------------------------|
| AU | AIIC | substance is listed |
| CA | DSL | substance is listed |
| CN | IECSC | substance is listed |
| EU | ECSI | substance is listed |
| EU | REACH Reg. | substance is listed |
| JP | CSCL-ENCS | substance is listed |
| KR | KECI | substance is listed |
| MX | INSQ | substance is listed |
| NZ | NZIoC | substance is listed |
| PH | PICCS | substance is listed |
| TW | TCSI | substance is listed |
| US | TSCA | substance is listed as "ACTIVE" |

Legend

AIIC Australian Inventory of Industrial Chemicals
CSCL-ENCS List of Existing and New Chemical Substances (CSCL-ENCS)
DSL Domestic Substances List (DSL)
ECSI EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC Inventory of Existing Chemical Substances Produced or Imported in China
INSQ National Inventory of Chemical Substances
KECI Korea Existing Chemicals Inventory
NZIoC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)

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Legend

REACH Reg. REACH registered substances
TCSI Taiwan Chemical Substance Inventory
TSCA Toxic Substance Control Act

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|---|--|-----------------|
| 2.2 | Labelling of packages where the contents do not exceed 125 ml: Signal word: Danger | | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 14.8 | | Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional information | yes |
| 14.8 | | Classification code: M7 | yes |
| 14.8 | | Danger label(s): 9 Fish and tree | yes |
| 14.8 | | Danger label(s): change in the listing (table) | yes |
| 14.8 | | Environmental hazards: Yes Hazardous to water | yes |
| 14.8 | | Special provisions (SP): 274, 335, 375, 601 | yes |
| 14.8 | | Excepted quantities (EQ): E1 | yes |
| 14.8 | | Limited quantities (LQ): 5 kg | yes |
| 14.8 | | Transport category (TC): 3 | yes |
| 14.8 | | Hazard identification No: 90 | yes |
| 15.1 | Restrictions according to REACH, Annex XVII | | yes |
| 15.1 | | Dangerous substances with restrictions (REACH, Annex XVII): change in the listing (table) | yes |

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| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|--|---|-----------------|
| 15.1 | List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list | | yes |
| 15.1 | | Substance of Very High Concern (SVHC): change in the listing (table) | yes |
| 15.1 | | National regulations(GB) | yes |
| 15.1 | | List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list | yes |
| 15.1 | | Substance of Very High Concern (SVHC) acc. to GB REACH and HSE: change in the listing (table) | yes |
| 15.1 | | Restrictions according to GB REACH, Annex 17 | yes |
| 15.1 | | Dangerous substances with restrictions (GB REACH, Annex 17): change in the listing (table) | yes |
| 15.1 | | Other information: Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. | yes |
| 15.1 | | National inventories: change in the listing (table) | yes |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|-----------|---|
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| ATE | Acute Toxicity Estimate |
| BCF | Bioconcentration factor |
| Carc. | Carcinogenicity |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| Ceiling-C | Ceiling value |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| ErC50 | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |

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| Abbr. | Descriptions of used abbreviations |
|-----------|--|
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| HSE | Health and Safety Executive |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air |
| IMDG | International Maritime Dangerous Goods Code |
| IMDG-Code | International Maritime Dangerous Goods Code |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| M-factor | Means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| Repr. | Reproductive toxicity |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| STEL | Short-term exposure limit |
| TWA | Time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |
| WEL | Workplace exposure limit |

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|------|--|
| H302 | Harmful if swallowed. |
| 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 (if exposed). |

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| Code | Text |
|-------|---|
| H350i | May cause cancer by inhalation. |
| H360F | May damage fertility (if exposed). |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.