

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Revision Date 06/15/2018

Version 1.6

SECTION 1. Identification**Product identifier**

Product number	802540
Product name	Cobalt(II) chloride anhydrous for synthesis
CAS-No.	7646-79-9

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

Identified uses	Chemical for synthesis
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Details of the supplier of the safety data sheet

Company	Millipore (Canada) Ltd 109 Woodbine Downs Blvd. Unit 5 Etobicoke Ontario M9W 6Y1 Canada General Inquiries: +1 800-645-5476 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification**GHS Classification**

Acute toxicity, Category 4, Oral, H302
Serious eye damage, Category 1, H318
Respiratory sensitization, Category 1, H334
Skin sensitization, Category 1, H317
Germ cell mutagenicity, Category 2, H341
Carcinogenicity, Category 1B, Inhalation, H350i
Reproductive toxicity, Category 1B, H360

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling*Hazard pictograms**Signal Word*

Danger

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Hazard Statements

H350i May cause cancer by inhalation.

H360 May damage fertility or the unborn child.

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.

Precautionary Statements

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing must not be allowed out of the workplace.

P280 Wear protective gloves/ eye protection/ face protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P341 IF INHALED: If breathing is difficult, 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.

P310 Immediately call a POISON CENTER/doctor.

P321 Specific treatment (see supplemental first aid instructions on this label).

P330 Rinse mouth.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P363 Wash contaminated clothing before reuse.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula

CoCl₂

Cl₂Co (Hill)

Molar mass

129.83 g/mol

Hazardous ingredients

Chemical name (Concentration)

CAS-No.

Cobalt(II) chloride (>= 90 % - <= 100 %)

7646-79-9

SECTION 4. First aid measures

Description of first-aid measures

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General advice

First aider needs to protect himself.

Inhalation

After inhalation: fresh air. Call in physician.

Skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

Eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Risk of serious damage to eyes.

Symptoms of an acute cobalt intoxication: diarrhea, loss of appetite, drop in body temperature, drop in blood pressure. Toxic effect on kidneys (proteinuria, anuria), heart, and pancreas.

Irritation and corrosion, Allergic reactions

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

Hydrogen chloride gas

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture.

Conditions for safe storage, including any incompatibilities

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store below +30°C (+86°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>Cobalt(II) chloride 7646-79-9</i>			
CAD AB OEL	Time Weighted Average (TWA):	0.02 mg/m ³	Expressed as: as Co
CAD BC OEL	Time Weighted Average (TWA):	0.02 mg/m ³	Expressed as: as Co
CAD MB OEL	Time Weighted Average (TWA):	0.02 mg/m ³	Expressed as: as Co
CAD ON OEL	Time Weighted Average (TWAEV):	0.02 mg/m ³	Expressed as: as Co
OEL (QUE)	Time Weighted Average (TWA):	0.02 mg/m ³	Expressed as: as Co

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

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Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Tightly fitting safety goggles

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

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 and supplied by us as well as to the purpose specified by us. 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).

Other protective equipment:

protective clothing

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 3 (acc. to DIN 3181) for solid and liquid particles of toxic and very toxic substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state	powder
Color	blue
Odor	No strong odor known.
Odor Threshold	No information available.

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pH	No information available.
Melting point	1355 °F (735 °C)
Boiling point/boiling range	1,920 °F (1,049 °C) at 1,013 hPa
Flash point	Not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	Does not sustain combustion.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor pressure	No information available.
Relative vapor density	No information available.
Density	3.36 g/cm ³ at 77 °F (25 °C)
Relative density	No information available.
Water solubility	585.9 g/l at 68 °F (20 °C) Method: OECD Test Guideline 105
Partition coefficient: n-octanol/water	Not applicable for inorganic substances
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	Not applicable

SECTION 10. Stability and reactivity

Reactivity

See below

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Cobalt(II) chloride anhydrous for synthesis

Chemical stability

sublimable

Possibility of hazardous reactions

Risk of explosion with:

Alkali metals

Violent reactions possible with:

Oxidizing agents

Conditions to avoid

Exposure to air.

Moisture.

Incompatible materials

no information available

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact, Ingestion

Acute oral toxicity

LD50 Rat: 418 mg/kg

OECD Test Guideline 401

Acute inhalation toxicity

Symptoms: Irritation symptoms in the respiratory tract.

Acute dermal toxicity

LDLO Rat: 2,000 mg/kg

(RTECS)

Skin irritation

In vitro study

Result: non-corrosive

OECD Test Guideline 431

Rabbit

Result: No skin irritation

OECD Test Guideline 404

Possible damages: slight irritation

Eye irritation

Rabbit

Result: Irreversible effects on the eye

OECD Test Guideline 405

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Product name

Cobalt(II) chloride anhydrous for synthesis

Causes serious eye damage.

Sensitization

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

May cause an allergic skin reaction.

Buehler Test Guinea pig

Result: positive

Method: OECD Test Guideline 406

Genotoxicity in vivo

In vivo micronucleus test

Mouse

Result: negative

Method: OECD Test Guideline 474

In vivo micronucleus test

Mouse

Result: negative

Method: OECD Test Guideline 474

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

CMR effects

Mutagenicity: Suspected of causing genetic defects.

Carcinogenicity: May cause cancer by inhalation.

Teratogenicity / Reproductive toxicity: May damage fertility or the unborn child.

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC

Group 2B: Possibly carcinogenic to humans

Cobalt(II) chloride

7646-79-9

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

Confirmed animal carcinogen with unknown relevance to

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Product name

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humans.

Cobalt(II) chloride

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Further information

Symptoms of an acute cobalt intoxication: diarrhea, loss of appetite, drop in body temperature, drop in blood pressure. Toxic effect on kidneys (proteinuria, anuria), heart, and pancreas.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

flow-through test LC50 Danio rerio (zebra fish): 85.3 mg/l; 96 h

Analytical monitoring: yes(ECHA)

Toxicity to daphnia and other aquatic invertebrates

static test LC50 Ceriodaphnia dubia (water flea): 0.605 mg/l; 48 h

Analytical monitoring: yes

US-EPA

Toxicity to algae

IC50 algae: 0.0067 mg/l

Toxicity to bacteria

Respiration inhibition EC50 activated sludge: 120 mg/l; 30 min

Analytical monitoring: yes

OECD Test Guideline 209

Toxicity to fish (Chronic toxicity)

flow-through test NOEC Oncorhynchus mykiss (rainbow trout): 2.1 mg/l; 81 d

Analytical monitoring: yes

OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

semi-static test NOEC: 6.83 mg/l; 28 d

Analytical monitoring: yes

OECD Test Guideline 211

Persistence and degradability

Biodegradability

The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential

Partition coefficient: n-octanol/water

Not applicable for inorganic substances

Mobility in soil

No information available.

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SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number

UN 3077

Proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (COBALT DICHLORIDE)

Class

9

Packing group

III

Environmentally hazardous

--

Air transport (IATA)

UN number

UN 3077

Proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (COBALT DICHLORIDE)

Class

9

Packing group

III

Environmentally hazardous

--

Special precautions for user

no

Sea transport (IMDG)

UN number

UN 3077

Proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (COBALT DICHLORIDE)

Class

9

Packing group

III

Environmentally hazardous

--

Special precautions for user

yes

EmS

F-A S-F

SECTION 15. Regulatory information

United States of America

Canada

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

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Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

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.

H360 May damage fertility or the unborn child.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

P201 Obtain special instructions before use.

P273 Avoid release to the environment.

P280 Wear eye protection.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Restricted to professional users.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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