



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 Version 2 Revision Date 10.12.2018

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

### 1.1 Product identifiers

Product name : Cobalt(II) chloride hexahydrate

Product Number : 5396

Brand : Better Equipped

Index-No. : 027-004-00-5

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.

CAS-No. : 7791-13-1

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

Identified uses : Laboratory chemicals, Manufacture of substances

Uses advised against : Not for sale to the general public

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

Company : Better Equipped,  
Wrenbury Business Park,  
Wrenbury Road,  
Wrenbury,  
Nantwich, Cheshire,  
CW5 8EB, UK

Telephone +44 (0) 800 9707142

Fax +44 (0) 800 066 4443

E-mail address [sales@betterequipped.co.uk](mailto:sales@betterequipped.co.uk)

### 1.4 Emergency telephone number

Emergency Phone # +44 (0)1270 781238

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302

Respiratory sensitisation (Category 1), H334

Skin sensitisation (Category 1), H317

Germ cell mutagenicity (Category 2), H341

Carcinogenicity, Inhalation (Category 1B), H350i

Reproductive toxicity (Category 1B), H360F

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

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

### 2.2 Label elements

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

Pictogram



Signal word

Danger

Hazard statement(s)

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.  
 H350i May cause cancer by inhalation.  
 H360F May damage fertility.  
 H400 Very toxic to aquatic life  
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 Obtain special instructions before use.  
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves.  
 P284 Wear respiratory protection.  
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Supplemental Hazard Statements

none

Restricted to professional users.

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : Cobaltous chloride  
 Formula :  $\text{Cl}_2\text{Co} \cdot 6\text{H}_2\text{O}$   
 Molecular weight : 237.93 g/mol  
 CAS-No. : 7791-13-1  
 EC-No. : 231-589-4  
 Index-No. : 027-004-00-5

#### Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
<b>Cobalt dichloride hexahydrate</b> Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
CAS-No. 7791-13-1 EC-No. 231-589-4 Index-No. 027-004-00-5	Acute Tox. 4; Resp. Sens. 1; Skin Sens. 1; Muta. 2; Carc. 1B; Repr. 1B; Aquatic Acute 1; Aquatic Chronic 1; H302, H334, H317, H341, H350i, H360F, H400, H410 Concentration limits: >= 0.01 %: Carc. 1B, H350i; M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 10	<= 100 %

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

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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### Unsuitable extinguishing media

None stated

### 5.2 Special hazards arising from the substance or mixture

No data available

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

#### - 6.1.1 For non-emergency personnel

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

#### - 6.1.2 For emergency responders

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Avoid exposure - obtain special instructions before use. Avoid formation of dust and aerosols. Container may be opened only under exhaust ventilation hood. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.

Provide appropriate exhaust ventilation at places where dust is formed.

7.1.2 Advice on general occupational hygiene:

- No smoking.
- Do not eat or drink.
- Wash hands after use.
- Remove contaminated clothing.

For precautions see section 2.2.

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

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Components with workplace control parameters

Component	CAS-No.	ValueForm of exposure	Control parameters	Basis
Cobalt dichloride hexahydrate	7791-13-1	TWA	0.1 mg/m <sup>3</sup>	UK. EH40 WEL - Workplace Exposure Limits
	Remarks	<p>Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological, irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even to tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyper-responsive. 54 Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified asthmagens or respiratory sensitisers.</p> <p>Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be prevented. Where this is not possible, the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive. For substances that can cause occupational asthma, COSHH requires that exposure be reduced as low as is reasonably practicable.</p> <p>Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance.</p> <p>Capable of causing occupational asthma. The identified substances are those which: - are assigned the risk phrase 'R42: May cause sensitisation by inhalation'; or 'R42/43: May cause sensitisation by inhalation and skin contact' or - are listed in section C of HSE publication 'Asthmagens? Critical assessments of the evidence for agents implicated in occupational asthma' as updated from time to time, or any other substance which the risk assessment has shown to be a potential cause of occupational asthma.</p> <p>Capable of causing cancer and/or heritable genetic damage. The identified substances include those which: - are assigned the risk phrases 'R45: May cause cancer'; 'R46: may cause heritable genetic damage'; 'R49: May cause cancer by inhalation' or - a substance or process listed in Schedule 1 of COSHH.</p> <p>Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used. Carcinogenic applies for cobalt dichloride and sulphate. The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma.</p>		

### 8.1.2 Information on currently recommended monitoring procedures

For currently recommended monitoring procedures, see HSE series 'Methods for the Determination of Hazardous Substances' (MDHS)

### 8.1.3 The relevant DNELs and PNECs for the substance/s for the exposure scenarios:

DNEL's. The derived no- or minimum effect level (DN(M)EL) is the level of exposure above which a human should not be exposed to a substance. Please note that when more than one summary is provided, DN(M)EL values may refer to constituents of the substance and not to the substance as a whole.

#### Data for Workers

<b>INHALATION Exposure</b>	<b>Threshold</b>	<b>Most sensitive study</b>
<b>Systemic Effects</b>		
Long-term:	No hazard identified	
Acute /short term:	No hazard identified	
<b>Local Effects</b>		
Long-term:	(DNEL) 88.1 µg/m <sup>3</sup>	repeated dose toxicity
Acute /short term:	High hazard (no threshold derived)	
<b>DERMAL Exposure</b>	<b>Threshold</b>	<b>Most sensitive study</b>
<b>Systemic Effects</b>		
Long-term:	No hazard identified	
Acute /short term:	No hazard identified	
<b>Local Effects</b>		
Long-term:	Medium hazard (no threshold derived)	
Acute /short term:	Medium hazard (no threshold derived)	
<b>EYE Exposure</b>		
Medium hazard (no threshold derived)		

### Data for the General Population

<b>INHALATION Exposure</b>	<b>Threshold</b>	<b>Most sensitive study</b>
<b>Systemic Effects</b>		
Long-term:	No hazard identified	
Acute /short term:	No hazard identified	
<b>Local Effects</b>		
Long-term:	(DNEL) 13.9 µg/m <sup>3</sup>	carcinogenicity
Acute /short term:	High hazard (no threshold derived)	
<b>DERMAL Exposure</b>	<b>Threshold</b>	<b>Most sensitive study</b>
<b>Systemic Effects</b>		
Long-term:	No hazard identified	
Acute /short term:	No hazard identified	
<b>Local Effects</b>		
Long-term:	Medium hazard (no threshold derived)	
Acute /short term:	Medium hazard (no threshold derived)	
<b>ORAL Exposure</b>	<b>Threshold</b>	<b>Most sensitive study</b>
<b>Systemic Effects</b>		
Long-term:	(DNEL) 66 µg/kg bw/day	repeated dose toxicity
Acute /short term:	No hazard identified	
<b>EYE Exposure</b>		
Medium hazard (no threshold derived)		

PNEC's. The Predicted No-Effect Concentration (PNEC) value is the concentration of a substance below which adverse effects in the environment are not expected to occur. Please note that when more than one summary is provided, PNEC values may refer to constituents of the substance and not to the substance as a whole.

Hazard for Aquatic Organisms	
Freshwater	620 ng/L (1)
Intermittent releases (freshwater)	-
Marine water	2.36 µg/L (1)
Intermittent releases (marine water)	-
Sewage treatment plant (STP)	370 µg/L (1)
Sediment (freshwater)	53.8 mg/kg sediment dw (1)
Sediment (marine water)	69.8 mg/kg sediment dw (1)
Hazard for Air	
Air	No hazard identified (1)
Hazard for Terrestrial Organism	
Soil	10.9 mg/kg soil dw (1)
Hazard for Predators	
Secondary poisoning	No potential for bioaccumulation (1)

## 8.2 Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Use Local exhaust ventilation (LEV).

### Personal protective equipment

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0.11 mm Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method:



EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.920 g/cm <sup>3</sup>
n)	Water solubility	No data available
o)	Partition coefficient: n- octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

### 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

None based on the data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

None under normal processing

### 10.4 Conditions to avoid

Exposure to moisture

**10.5 Incompatible materials**

Oxidizing agents, Alkali metals

**10.6 Hazardous decomposition products**

Other decomposition products - No data available

Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Cobalt/cobalt oxides

In the event of fire: see section 5

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**SECTION 11: Toxicological information**

**11.1 Information on toxicological effects**

**Acute toxicity**

LD50 Oral - Rat - 766 mg/kg

Remarks: Behavioral:Tremor. Diarrhoea Nutritional and Gross Metabolic:Weight loss or decreased weight gain.

LD50 Dermal - Rat - > 2,000 mg/kg

**Skin corrosion/irritation**

**Serious eye damage/eye irritation**

No data available

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

In vitro tests showed mutagenic effects

Mouse

mammary gland

Mutation in mammalian somatic cells.

**Carcinogenicity**

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Cobalt dichloride hexahydrate)

2B - Group 2B: Possibly carcinogenic to humans (Cobalt dichloride hexahydrate)

**Reproductive toxicity**

Presumed human reproductive toxicant

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: GG0200000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish - LC50 - Cyprinus carpio (Carp) - 0.33 mg/l - 96.0 h

Toxicity to daphnia & other aquatic invertebrates – EC50 - Daphnia magna (Water flea) - 1.1 - 1.6 mg/l - 48 h

Toxicity to algae - EC50 - Chlorella vulgaris (Fresh water algae) - 0.5 mg/l - 96 h

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

Very toxic to aquatic life.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Unused product may be returned and reused, in addition to disposal.

#### Contaminated packaging

Dispose of as unused product.

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 3077

IMDG: 3077

IATA: 3077

### 14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt dichloride hexahydrate)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt dichloride hexahydrate)

IATA: Environmentally hazardous substance, solid, n.o.s. (Cobalt dichloride hexahydrate)

### 14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

### 14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

### 14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes

IATA: yes

### 14.6 Special precautions for user

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

N/A

#### Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination

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**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

**Authorisations and/or restrictions on use**

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Cobalt dichloride hexahydrate

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).  
: Cobalt dichloride hexahydrate

**15.2 Chemical safety assessment**

For this product a chemical safety assessment was not carried out

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**SECTION 16: Other information****Full text of H-Statements referred to under sections 2 and 3.**

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.
H350i	May cause cancer by inhalation.
H360F	May damage fertility.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**Revisions made since previous version of data sheet:**

The following sections of this data sheet have been updated:

1.1, 1.2, 4.1, 5.1, 6.1, 7.1, 8.1, 8.2, 11, 12, 13, 14.7, 16

We strongly recommend reading the entire data sheet for this chemical in preparation ahead of use.

**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Better Equipped and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

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