

# Safety data sheet

according to 1907/2006/EC, Article 31

Revision: 13.12.2012

Printing date 01.07.2013

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

### 1.1 Product identifier

Trade name

**Cobalt(II) sulfate hydrate**

Stock number:

11340

CAS Number:

60459-08-7

EC number:

233-334-2

Index number:

027-005-00-0

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

Identified use:

SU24 Scientific research and development

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

Manufacturer/Supplier:

Alfa Aesar GmbH &amp; Co.KG

A Johnson Matthey Company

Zeppelinstr. 7b

76185 Karlsruhe / Germany

Tel: +49 (0) 721 84007 280

Fax: +49 (0) 721 84007 300

Email: tech@alfa.com

www.alfa.com

Informing department:

Product safety Tel + +049 (0) 7275 988687-0

1.4 Emergency telephone number:

Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)

Poison Information Center Mainz

www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS08 health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 1B H350i May cause cancer by inhalation.

Repr. 1B H360F May damage fertility.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

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

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



T; Toxic

R49-60: May cause cancer by inhalation. May impair fertility.



Xn; Harmful

R22-68: Harmful if swallowed. Possible risk of irreversible effects.



Xn; Sensitising

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



N; Dangerous for the environment

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

### Information concerning particular hazards for human and environment:

Other hazards that do not result in classification

Not applicable

No information known.

### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms

Signal word

Hazard statements

The substance is classified and labelled according to the CLP regulation.

GHS07, GHS08, GHS09

Danger

H302 Harmful if swallowed.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H350i May cause cancer by inhalation.

H360F May damage fertility.

H410 Very toxic to aquatic life with long lasting effects.

P273 Avoid release to the environment.

P201 Obtain special instructions before use.

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

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### Precautionary statements

### 2.3 Other hazards

Results of PBT and vPvB assessment

PBT:

Not applicable.

vPvB:

Not applicable.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

CAS# Designation:

60459-08-7 Cobalt(II) sulfate hydrate

Identification number(s):

233-334-2

EC number:

027-005-00-0

Index number:

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

(Contd. on page 2)  
DE/E

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

Printing date 01.07.2013

Revision: 13.12.2012

Trade name **Cobalt(II) sulfate hydrate**

(Contd. of page 1)

After eye contact  
After swallowing  
4.2 Most important symptoms and effects, both acute and delayed  
4.3 Indication of any immediate medical attention and special treatment needed

Rinse opened eye for several minutes under running water. Then consult doctor.  
Seek medical treatment.  
No further relevant information available.  
No further relevant information available.

**SECTION 5: Firefighting measures**

5.1 Extinguishing media  
Suitable extinguishing agents  
5.2 Special hazards arising from the substance or mixture

Use fire fighting measures that suit the environment.  
If this product is involved in a fire, the following can be released:  
Toxic metal oxide smoke  
Sulphur oxides (SO<sub>x</sub>)

5.3 Advice for firefighters  
Protective equipment:

Wear self-contained breathing apparatus.  
Wear full protective suit.

**SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation

6.2 Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach sewage system or water bodies.  
Do not allow to enter the ground/soil.

6.3 Methods and material for containment and cleaning up:

Dispose of contaminated material as waste according to item 13.  
Ensure adequate ventilation.

Prevention of secondary hazards:  
6.4 Reference to other sections

No special measures required.  
See Section 7 for information on safe handling  
See section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

**SECTION 7: Handling and storage**

7.1 Precautions for safe handling

Keep containers tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle container with care.

Information about protection against explosions and fires:

No information known.

7.2 Conditions for safe storage, including any incompatibilities  
Storage

Requirements to be met by storerooms and containers:  
Information about storage in one common storage facility:

No special requirements.

Further information about storage conditions:

Store away from oxidizing agents.  
Store away from strong bases.

7.3 Specific end use(s)

Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
Store in a locked cabinet or with access restricted to technical experts or their assistants.  
No further relevant information available.

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

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

8.1 Control parameters  
Components with critical values that require monitoring at the workplace:

Cobalt, elemental & inorganic compounds, as Co

	mg/m <sup>3</sup>
ACGIH TLV	0.02; Confirmed animal carcinogen
Austria	Carcinogen
Belgium TWA	0.05
Denmark TWA	0.05
Finland TWA	0.05 (skin)
Germany	Carcinogen
Hungary TWA	0.1; 0.2-STEL
Japan OEL	0.05; 2B-Carcinogen
Korea TLV	0.02; Confirmed animal carcinogen
Netherlands MAC-TGG	0.05
Norway TWA	0.05
Poland TWA	0.05; 0.2-STEL
Russia	0.5-STEL
Sweden NGV	0.05
Switzerland MAK-W	0.1; Carcinogen
United Kingdom TWA	0.1
USA PEL	0.1 (dust and fume)
Additional information:	No data

8.2 Exposure controls  
Personal protective equipment  
General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.  
Keep away from foodstuffs, beverages and food.  
Instantly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.  
Store protective clothing separately.  
Maintain an ergonomically appropriate working environment.

Breathing equipment:  
Protection of hands:

Use breathing protection with high concentrations.  
Check protective gloves prior to each use for their proper condition.  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.  
Impervious gloves  
Not determined

Material of gloves  
Penetration time of glove material

(Contd. on page 3)  
DE/E

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

Revision: 13.12.2012

Printing date 01.07.2013

Trade name **Cobalt(II) sulfate hydrate**

Eye protection: Safety glasses  
Body protection: Protective work clothing.

(Contd. of page 2)

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Form: Crystalline  
Colour: Red-orange  
Smell: Odourless  
Odour threshold: Not determined.

pH-value (100 g/l) at 20 °C: 4

**Change in condition**

Melting point/Melting range: 97 °C  
Boiling point/Boiling range: Not determined  
Sublimation temperature / start: Not determined

Flash point: Not applicable  
Inflammability (solid, gaseous): Not determined.  
Ignition temperature: Not determined  
Decomposition temperature: Not determined  
Self-inflammability: Not determined.

Danger of explosion: Product is not explosive.

**Critical values for explosion:**

Lower: Not determined  
Upper: Not determined  
Steam pressure: Not applicable.  
Density at 20 °C: 1,2 g/cm<sup>3</sup>  
Relative density: Not determined.  
Vapour density: Not applicable.  
Evaporation rate: Not applicable.

**Solubility in / Miscibility with**

Water: Soluble  
Partition coefficient (n-octanol/water): Not determined.

**Viscosity:**

dynamic: Not applicable.  
kinematic: Not applicable.

9.2 Other information No further relevant information available.

**SECTION 10: Stability and reactivity****10.1 Reactivity****10.2 Chemical stability**

Thermal decomposition / conditions to be avoided:

**10.3 Possibility of hazardous reactions****10.5 Incompatible materials:****10.6 Hazardous decomposition products:**

No information known.  
Stable under recommended storage conditions.  
No decomposition if used and stored according to specifications.  
No dangerous reactions known  
Oxidizing agents  
Bases  
Sulphur oxides (SO<sub>x</sub>)  
Toxic metal oxide smoke

**SECTION 11: Toxicological information****11.1 Information on toxicological effects**

Acute toxicity: Harmful if swallowed.

**LD/LC50 values that are relevant for classification:**

Oral LD50 582 mg/kg (rat) (RTECS; heptahydrate)

**Skin irritation or corrosion:****Eye irritation or corrosion:****Sensitization:****Germ cell mutagenicity:****Carcinogenicity:**

May cause irritation  
May cause irritation  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause an allergic skin reaction.  
Suspected of causing genetic defects.  
May cause cancer.  
IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.  
NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this product.  
May damage fertility or the unborn child.

**Reproductive toxicity:****Specific target organ system toxicity - repeated exposure:****Specific target organ system toxicity - single exposure:****Aspiration hazard:****Other information (about experimental toxicology):****Additional toxicological information:**

No effects known.  
No effects known.  
No effects known.

Tumorigenic effects have been observed on tests with laboratory animals.  
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:****12.2 Persistence and degradability****12.3 Bioaccumulative potential****12.4 Mobility in soil****Ecotoxicological effects:****Remark:****Additional ecological information:****General notes:**

No further relevant information available.  
No further relevant information available.  
No further relevant information available.  
No further relevant information available.

Very toxic for fish

Do not allow material to be released to the environment without proper governmental permits.  
Water danger class 3 (Self-assessment): extremely hazardous for water.  
Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into soil.  
Also poisonous for fish and plankton in water bodies.  
May cause long lasting harmful effects to aquatic life.  
Avoid transfer into the environment.

(Contd. on page 4)  
DE/E

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 01.07.2013

Revision: 13.12.2012

Trade name **Cobalt(II) sulfate hydrate**

(Contd. of page 3)

Very toxic for aquatic organisms

**12.5 Results of PBT and vPvB assessment****PBT:****vPvB:****12.6 Other adverse effects**

Not applicable.

Not applicable.

No further relevant information available.

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation**

Hand over to disposers of hazardous waste.  
Must be specially treated under adherence to official regulations.  
Consult state, local or national regulations for proper disposal.

**Uncleaned packagings:****Recommendation:****Recommended cleaning agent:**

Disposal must be made according to official regulations.

Water, if necessary with cleaning agent.

**SECTION 14: Transport information****UN-Number****ADR, IMDG, IATA**

UN3077

**14.2 UN proper shipping name****ADR****IMDG****IATA**

3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Cobalt(II) sulfate hydrate)  
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) sulfate hydrate), MARINE POLLUTANT  
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) sulfate hydrate)

**14.3 Transport hazard class(es)****ADR****Class****Label****IMDG, IATA****Class****Label**

9 (M7) Miscellaneous dangerous substances and articles.  
9

9 Miscellaneous dangerous substances and articles.  
9

**Packing group****ADR, IMDG, IATA**

III

**14.5 Environmental hazards:****Marine pollutant:****Special marking (ADR):****Special marking (IATA):**

Yes (P)  
Symbol (fish and tree)  
Symbol (fish and tree)  
Symbol (fish and tree)

**14.6 Special precautions for user****Kemler Number:**

Warning: Miscellaneous dangerous substances and articles.  
90

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC****Code**

Not applicable.

**Transport/Additional information:****ADR****Excepted quantities (EQ):****Limited quantities (LQ)****Transport category****Tunnel restriction code**

E1  
5 kg  
3  
E

**UN "Model Regulation":**

UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Cobalt(II) sulfate hydrate), 9, III

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

Substance is not listed.

**Standard for the Uniform Scheduling of****Drugs and Poisons**

Substance is not listed.

**National regulations****Information about limitation of use:**

Employment restrictions concerning young persons must be observed.  
For use only by technically qualified individuals.

**Water hazard class:****Other regulations, limitations and prohibitive****ELINCS (European List of Notified Chemical****Substances)****Substances of very high concern (SVHC)****according to REACH, Article 57**

Substance is not listed.

This product contains a product listed by the European Chemicals Agency (ECHA) as a Substance of Very High Concern (SVHC). Information concerning SVHC can be found in Annex XIV for the REACH Regulation.  
Substance is not listed.

**REACH - Pre-registered substances****15.2 Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing data specification sheet:****Abbreviations and acronyms:**

Health, Safety and Environmental Department.

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

(Contd. on page 5)  
DE/E

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

Printing date 01.07.2013

Revision: 13.12.2012

Trade name **Cobalt(II) sulfate hydrate**

(Contd. of page 4)

IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
P: Marine Pollutant  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent

DE/E