

## 1: Identification

### Product identifier

**Product name:** Cobalt(II) sulfate heptahydrate

**Stock number:** A16201

**CAS Number:**

10026-24-1

**EC number:**

233-334-2

**Index number:**

027-005-00-0

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

**Identified use:** SU24 Scientific research and development

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

#### Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department

**Emergency telephone number:**

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

Distributed by:



4621 Technology Drive, Golden, CO 80403  
ph: (303) 762-0800 fax: (303) 762-1240

Part #: Custom

## 2: Hazard(s) identification

### 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. 1A H350 May cause cancer.

Repr. 1A H360 May damage fertility or the unborn child.

**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; Sensitizing**

R42/43: May cause sensitization 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:** Not applicable

**Hazards not otherwise classified:** No information known.

### Label elements

**Labelling according to Regulation (EC) No 1272/2008** The substance is classified and labeled according to the CLP regulation.

### Hazard pictograms

**GHS07 GHS08**

**Signal word:** Danger

### Hazard statements

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.

H350 May cause cancer.

H360 May damage fertility or the unborn child.

### Precautionary statements

P284 In case of inadequate ventilation wear respiratory protection.

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

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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

P405 Store locked up.

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

### WHMIS classification

D2A - Very toxic material causing other toxic effects





Product name: Cobalt(II) sulfate heptahydrate

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Classification system  
HMIS ratings (scale 0-4)  
(Hazardous Materials Identification System)

HEALTH 2 Health (acute effects) = 2  
FIRE 0 Flammability = 0  
REACTIVITY 1 Physical Hazard = 1

Other hazards  
Results of PBT and vPvB assessment  
PBT: Not applicable.  
vPvB: Not applicable.

### 3: Composition/information on ingredients

Chemical characterization: Substances  
CAS# Description:  
10026-24-1 Cobalt(II) sulfate heptahydrate  
Identification number(s):  
EC number: 233-334-2  
Index number: 027-005-00-0

### 4: First-aid measures

Description of first aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed No further relevant information available.

### 5: Fire-fighting measures

Extinguishing media

Suitable extinguishing agents Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Sulfur oxides (SOx)

Metal oxide fume

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

### 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions:

Do not allow product to reach sewage system or any water course.

Do not allow to penetrate the ground/soil.

Methods and material for containment and cleaning up:

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Prevention of secondary hazards: No special measures required.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

### 7: Handling and storage

Handling

Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires: The product is not flammable

Conditions for safe storage, including any incompatibilities

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Specific end use(s) No further relevant information available.

### 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.

Control parameters

Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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**Product name: Cobalt(II) sulfate heptahydrate**

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**Additional Occupational Exposure Limit Values for related materials or possible hazards during processing:**

**10124-43-3 cobalt sulphate**

PEL (USA)	Long-term value: 0.1* mg/m <sup>3</sup> as Co; *for metal dust and fume
REL (USA)	Long-term value: 0.05 mg/m <sup>3</sup> as Co; metal dust & fume
TLV (USA)	Long-term value: 0.02 mg/m <sup>3</sup> as Co, BEI

**Additional information:** No data

**Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use suitable respirator when high concentrations are present.

**Recommended filter device for short term use:**

Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

**Material of gloves:** Nitrile rubber, NBR

**Penetration time of glove material (in minutes):** Not determined

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

**9: Physical and chemical properties**

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**

<b>Form:</b>	Crystalline
<b>Color:</b>	Dark red
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	Not determined.

**pH-value (100 g/l) at 20 °C (68 °F):** 4

**Change in condition**

<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	Not determined
<b>Sublimation temperature / start:</b>	Not determined
<b>Flammability (solid, gaseous)</b>	Not determined.
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Auto igniting:</b>	Not determined.

**Danger of explosion:**

Explosion limits: Not determined.

**Lower:**

Not determined

**Upper:**

Not determined

**Vapor pressure:**

Not applicable.

**Density at 20 °C (68 °F):**

2.03 g/cm<sup>3</sup> (16.94 lbs/gal)

**Relative density**

Not determined.

**Vapor density**

Not applicable.

**Evaporation rate**

Not applicable.

**Solubility in / Miscibility with**

**Water at 20 °C (68 °F):** 362 g/l

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

**Viscosity:**

**dynamic:** Not applicable.

**kinematic:** Not applicable.

**Other information** No further relevant information available.

**10: Stability and reactivity**

**Reactivity** No information known.

**Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** Reacts with strong oxidizing agents

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** Oxidizing agents

**Hazardous decomposition products:**

Sulfur oxides (SOx)

Metal oxide fume

**11: Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**

Harmful if swallowed.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

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

Oral | LD50 | 582 mg/kg (rat)

**Skin irritation or corrosion:** May cause irritation

**Eye irritation or corrosion:** May cause irritation

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USA



Product name: **Cobalt(II) sulfate heptahydrate**

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**Sensitization:**

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.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

**Carcinogenicity:**

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.  
ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans.  
Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

**Reproductive toxicity:**

May damage fertility or the unborn child.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.

**Specific target organ system toxicity - repeated exposure:** No effects known.

**Specific target organ system toxicity - single exposure:** No effects known.

**Aspiration hazard:** No effects known.

**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**12: Ecological information**

**Toxicity**

**Aquatic toxicity:** No further relevant information available.  
**Persistence and degradability:** No further relevant information available.  
**Bioaccumulative potential:** No further relevant information available.  
**Mobility in soil:** No further relevant information available.

**Ecotoxicological effects:**

**Remark:** Very toxic for aquatic organisms

**Additional ecological information:**

**General notes:**

Do not allow product to reach ground water, water course or sewage system.  
Danger to drinking water if even small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
May cause long lasting harmful effects to aquatic life.  
Avoid transfer into the environment.

Very toxic for aquatic organisms  
**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

**Other adverse effects:** No further relevant information available.

**13: Disposal considerations**



**Waste treatment methods**

**Recommendation:** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**14: Transport information**

<b>UN-Number</b> <b>DOT, IMDG, IATA</b>	UN3077
<b>UN proper shipping name</b> <b>DOT</b>	Environmentally hazardous substances, solid, n.o.s. (Cobalt(II) sulfate heptahydrate)
<b>IMDG, IATA</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) sulfate heptahydrate)
<b>Transport hazard class(es)</b> <b>DOT, IMDG</b>	
	
<b>Class</b> <b>Label</b> <b>Class</b> <b>Label</b> <b>IATA</b>	9 Miscellaneous dangerous substances and articles. 9 9 (M7) Miscellaneous dangerous substances and articles 9
	
<b>Class</b> <b>Label</b>	9 Miscellaneous dangerous substances and articles. 9
<b>Packing group</b> <b>DOT, IMDG, IATA</b>	III
<b>Environmental hazards:</b> <b>Special marking (ADR):</b> <b>Special marking (IATA):</b>	Symbol (fish and tree) Symbol (fish and tree)
<b>Special precautions for user</b> <b>EMS Number:</b>	Warning: Miscellaneous dangerous substances and articles F-A,S-F
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.

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USA



Product name: Cobalt(II) sulfate heptahydrate

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Transport/Additional information:

DOT  
Marine Pollutant (DOT): No  
UN "Model Regulation": UN3077, Environmentally hazardous substances, solid, n.o.s. (Cobalt(II) sulfate heptahydrate), 9, III

15: Regulatory information

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

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.  
All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)

10026-24-1 Cobalt(II) sulfate heptahydrate

California Proposition 65

Prop 65 - Chemicals known to cause cancer

10026-24-1 Cobalt(II) sulfate heptahydrate

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

This substance is included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH).

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

REACH - Pre-registered substances Substance is listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 SDS: Global Marketing Department

Abbreviations and acronyms:

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)