

SAFETY DATA SHEET

Version 4.3

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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifiers**

Product name : Cobalt

Product Number : 266655

Brand : Aldrich

1.2 Other means of identification

no data available

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.4 Details of the supplier of the safety data sheetCompany : Sigma-Aldrich Pty. Ltd.
12 Anella Avenue
CASTLE HILL NSW 2154
AUSTRALIA

Telephone : +61 2 9841 0555 (1800 800 097)

Fax : +61 2 9841 0500 (1800 800 096)

1.5 Emergency telephone numberEmergency Phone # : Free call (24/7): 1800 448 465
Int'l (24/7): +61 2 9037 2994 (CHEMTREC)

2. HAZARDS IDENTIFICATION**2.1 GHS Classification**

Respiratory sensitisation (Category 1)

Acute aquatic toxicity (Category 1)

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)

H334

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

H400

Very toxic to aquatic life.

Precautionary statement(s)

Prevention

P261

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

P273

Avoid release to the environment.

P285

In case of inadequate ventilation wear respiratory protection.

| | |
|-------------------------|---|
| Response P304 + P341 | IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| P342 + P311 | If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. |
| P391 | Collect spillage. |
| Disposal P501 | Dispose of contents/ container to an approved waste disposal plant. |

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| | | |
|------------------|---|--------------|
| Formula | : | Co |
| Molecular Weight | : | 58.93 g/mol |
| CAS-No. | : | 7440-48-4 |
| EC-No. | : | 231-158-0 |
| Index-No. | : | 027-001-00-9 |

| Component | Classification | Concentration |
|---------------|--|---------------|
| Cobalt | | |
| | Resp. Sens. 1; Aquatic Acute 1; H334, H400 | - |

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

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

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

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Cobalt/cobalt oxides

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

no data available

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.
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.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.
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)

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

| Component | CAS-No. | Value | Control parameters | Basis |
|-----------|-----------|--|------------------------|--|
| Cobalt | 7440-48-4 | TWA | 0.05 mg/m ³ | Australia. Workplace Exposure Standards for Airborne Contaminants. |
| | Remarks | Sensitiser ACGIH is the documentation source Documentation for the substances with this footnote can be found in the 5th Edition of the ACGIH documentation of the threshold limit values and biological exposure indices. For all other substances with 'H' in Column 7 the documentation can be found in the 6th Edition of the ACGIH documentation of the threshold limit values and biological exposure indices. | | |

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.

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

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|--|---------------------------------------|
| a) Appearance | Form: Pieces Colour: light grey |
| b) Odour | no data available |
| c) Odour Threshold | no data available |
| d) pH | no data available |
| e) Melting point/freezing point | Melting point/range: 1,493 - 1,495 °C |
| f) Initial boiling point and boiling range | 2,900 °C - lit. |

| | |
|---|-------------------|
| g) Flash point | not applicable |
| 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 | 8.9 g/mL at 25 °C |
| n) Water solubility | insoluble |
| o) Partition coefficient: n-octanol/water | log Pow: 5 |
| 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

10. STABILITY AND REACTIVITY

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

Air

10.5 Incompatible materials

Oxidizing agents, Mineral acids, Acetylene, Hydrazinium nitrate, Strong oxidizing agents, Material readily reacts with acids generating flammable and/or explosive hydrogen gas.

10.6 Hazardous decomposition products

Other decomposition products - no data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - rat - 6,171 mg/kg

Remarks: Behavioral: Somnolence (general depressed activity). Behavioral: Ataxia. Diarrhoea

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitisation**Germ cell mutagenicity**

no data available

Carcinogenicity

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

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

2A - Group 2A: Probably carcinogenic to humans (Cobalt)

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

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

2A - Group 2A: Probably carcinogenic to humans (Cobalt)

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

Reproductive toxicity

no data available

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: GF8750000

Kidney injury may occur., Damage to the eyes., Lung irritation, Throat., Rash, Vomiting, Diarrhoea

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

Toxicity to algae IC50 - Pseudokirchneriella subcapitata (green algae) - 0.05 mg/l - 72 h

12.2 Persistence and degradability**12.3 Bioaccumulative potential**

Bioaccumulation Rudarius ercodes - 8 Weeks
- 990 µg/l

Bioconcentration factor (BCF): 2.16

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

Very toxic to aquatic life.

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.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 3077

IMDG: 3077

IATA-DGR: 3077

14.2 UN proper shipping name

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

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

IATA-DGR: Environmentally hazardous substance, solid, n.o.s. (Cobalt)

14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA-DGR: 9

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA-DGR: III

14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes

IATA-DGR: yes

14.6 Special precautions for user

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

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

Standard for the Uniform Scheduling of Medicines and Poisons

no data available

Carcinogen classification under WHS Regulation 2011, Schedule 10

Not listed

Notification status

AICS: On the inventory, or in compliance with the inventory

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

ENCS: Not in compliance with the inventory - Cobalt

IECSC: On the inventory, or in compliance with the inventory

ISHL: Not in compliance with the inventory - Cobalt

KECI: On the inventory, or in compliance with the inventory

NZIoC: On the inventory, or in compliance with the inventory

PICCS: On the inventory, or in compliance with the inventory

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3.**

| | |
|---------------|--|
| Aquatic Acute | Acute aquatic toxicity |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H400 | Very toxic to aquatic life. |
| Resp. Sens. | Respiratory sensitisation |

Further information

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