

Safety Data Sheet COBALT NITRATE Hexahydrate

SDS no. 98W07M1H • Version 1.0 • Date of issue: 2024-01-24

SECTION 1: Identification

GHS Product identifier

Product name COBALT NITRATE Hexahydrate

Other means of identification

Cobalt (II) Nitrate Hexahydrate AR (Cobaltous Nitrate)	CA091-100G
Cobalt (II) Nitrate Hexahydrate AR (Cobaltous Nitrate)	CA091-500G
Cobalt(II) Nitrate Hexahydrate LR (Cobaltous Nitrate)	CL091-100G
Cobalt(II) Nitrate Hexahydrate LR (Cobaltous Nitrate)	CL091-500G

Recommended use of the chemical and restrictions on use

Cobalt pigments, sympathetic inks, hair dyes, decorating stoneware and porcelain, preparation of catalysts, production of vitamin B12 supplements, additive to soils and animal feeds, oxidising agent and laboratory reagent.

Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia
Telephone	08 8440 2000
email	www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Dangerous goods of Class 5.1 (Oxidizing Agent) are incompatible in a placard load with any of the following:
Class 1, Class 2.1, Class 2.3, Class 3, Class 4, Class 5.2, Class 7, Class 8, Fire risk substances and Combustible liquids.

Classification of the substance or mixture

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GHS classification in accordance with: UN GHS revision 7

- Acute toxicity, oral, Cat. 4
- Carcinogenicity, Cat. 1
- Respiratory sensitizer, Cat. 1
- Serious eye damage/eye irritation, Cat. 1
- Skin corrosion/irritation, Cat. 1B
- Skin sensitizer, Cat. 1
- Specific target organ toxicity following repeated exposure, Cat. 1
- Hazardous to the aquatic environment, short-term (acute), Cat. 1
- Hazardous to the aquatic environment, long-term (chronic), Cat. 1
- Toxic to reproduction, Cat. 1

GHS label elements, including precautionary statements

Pictograms



Signal word

Danger

Hazard statement(s)

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H350	May cause cancer [inhalation]
H360	May damage fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure [inhalation]
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell,
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water/soap
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: 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.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P310	Immediately call a POISON CENTER/doctor/physician

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P333+P313
P342+P311
P362+P364
P391
P405
P501

If skin irritation or rash occurs: Get medical advice/attention.
If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician
Take off contaminated clothing and wash it before reuse.
Collect spillage.
Store locked up.
Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 291.03

Components

Component	CAS no.	Concentration
Cobalt (II) nitrate hexahydrate	10026-22-9	<= 100 % (weight)
CLASSIFICATIONS: Hazardous to the aquatic environment, long-term (chronic), Cat. 1; Hazardous to the aquatic environment, short-term (acute), Cat. 1; Respiratory sensitizer, Cat. 1; Skin sensitizer, Cat. 1; Carcinogenicity, Cat. 1; Toxic to reproduction, Cat. 1; Serious eye damage/eye irritation, Cat. 1; Skin corrosion/irritation, Cat. 1B; Acute toxicity, oral, Cat. 4; Specific target organ toxicity following repeated exposure, Cat. 1. HAZARDS: H302 - Harmful if swallowed; H314 - Causes severe skin burns and eye damage; H317 - May cause an allergic skin reaction; H318 - Causes serious eye damage; H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled; H350 - May cause cancer [route]; H360 - May damage fertility or the unborn child [effect, route]; H372 - Causes damage to organs [organs] through prolonged or repeated exposure [route]; H400 - Very toxic to aquatic life; H410 - Very toxic to aquatic life with long lasting effects.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain and drench facilities in work area.
If inhaled	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Consult a physician.
In case of skin contact	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice /attention depending on the severity.
In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Most important symptoms/effects, acute and delayed

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

Indication of immediate medical attention and special treatment needed, if necessary

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Small fire: Use flooding quantities of water. Do NOT use dry chemical, CO2 or foam.
If safe to do so, move undamaged containers from the fire area. Do NOT move cargo if cargo has been exposed to heat.

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Large fire: Flood fire area with water from a protected position.

Cool containers with flooding quantities of water until well after the fire is out. If possible, withdraw from area and let it burn. Avoid getting water inside the containers; a violent reaction may occur. Dam fire control water for later disposal.

Specific hazards arising from the chemical

May evolve toxic fumes in fire (nitrogen oxides).

Will accelerate burning when involved in a fire. May explode on heating, shock, friction or contamination. Some will react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, clothing, etc). Fire may produce irritating, poisonous, and/or corrosive gases. Containers may explode on heating. Runoff may create fire or explosion hazard.

Special protective actions for fire-fighters

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid raising a dust cloud. Avoid contact with skin, eyes, nose, mouth.

Use personal protective equipment listed in Section 8.

Environmental precautions

Prevent from entering into drains, ditches, rivers or the sea.

Methods and materials for containment and cleaning up

Do not contaminate. Keep combustibles (wood, paper, clothing, oil, etc.) away from the spilled material. Do NOT touch damaged containers or spilled material unless wearing appropriate protective clothing. Prevent entry into waterways, drains or confined areas. Prevent exposure to heat.

Dry Spill: Use clean non-sparking tools to transfer material to a clean, dry plastic container and cover loosely. Move container from spill area.

Small Liquid Spill: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place in a loosely-covered container for later disposal.

Large Liquid Spill: SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid generation or accumulation of dusts. Avoid prolonged or repeated contact with skin, eyes and clothing . Wash hands and face thoroughly after working with material. Only use in well-ventilated areas.

Conditions for safe storage, including any incompatibilities

Store in a cool,dry place. Keep containers securely sealed and protected against physical damage. Do not store on wooden floors. Store away from combustible materials. Store away from sources of heat or ignition. Hygroscopic.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

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The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection

Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection

Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	Red crystals.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	55 - 57 °C
Boiling point or initial boiling point and boiling range	74 - 75 °C (decomposes)
Flammability	Non combustible. This material is an oxidising agent and may assist combustion. The possibility of toxic fumes in the event of a fire should be considered.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	pH ~ 4.0 (100 g/L, H ₂ O, 20 °C)
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Soluble (2170 g/L @ 100 °C). Solubility in Organic Solvents: Soluble in most organic solvents.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 1.87
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

Other Information: Red liquid becomes green and decomposes to the oxide above 74 °C.

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Reacts with incompatible materials

Chemical stability

Deliquescent in moist air.

Possibility of hazardous reactions

Mixtures with combustible material are readily ignited and may burn fiercely.

Conditions to avoid

Exposure to moisture.

Avoid storing in direct sunlight and avoid extremes of temperature.

Incompatible materials

Readily oxidisable materials, sodium hypophosphite, stannous chloride, reducing agents, aluminium powder, alkyl esters, phosphorous, tin (II) chloride, phosphinates, organic materials, strong acids, heavy metals, cyanides, thiocyanates, isothiocyanates and hypophosphites.

Hazardous decomposition products

Nitrous gases released during decomposition.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Acute Toxicity - Oral: LD50 (rat): 691 mg/kg.

Ingestion: Toxic. Symptoms include of abdominal pain, nausea, vomiting, diarrhoea, flushing of the face and ears, mild hypotension, rash and ringing in the ears. Causing systemic effects such as lack of appetite, drop in blood pressure, agitation and spasms.

Inhalation: May be harmful if inhaled. Irritating to respiratory system as may cause shortness of breath, coughing and pneumonitis. Respiratory hypersensitivity, asthma may appear. Inhalation of cobalt dust and fume is associated with an increased incidence of lung disease.

Skin corrosion/irritation

Causes severe skin burns. Contact causes irritating via redness, itching and pain to skin with symptoms including of dermatitis, nausea and vomiting. Risk of sensitisation.

Serious eye damage/irritation

Cause eye irritations/burns.

Respiratory or skin sensitization

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

Skin Sensitisation: H317 May cause an allergic skin reaction.

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Germ cell mutagenicity

No data available.

Carcinogenicity

The International Agency for Research on Cancer (IARC) indicates there is limited evidence for carcinogenicity of cobalt (II) chloride in experimental animals, and has assigned cobalt and cobalt compounds as possibly carcinogenic to humans (group 2B).

H350 May cause cancer by inhalation.

Reproductive toxicity

H360 May damage fertility.

Summary of evaluation of the CMR properties

No data available.

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

H372 Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available.

Additional information

Chronic Effects: Intoxication: Target organs: kidneys, heart and pancreas.

Prolonged or over exposure of cobalt dust/fumes inhalation is associated with an increased incidence of lung disease. Prolonged or over exposure by ingestion depresses blood cell production. Also may experience diarrhoea, loss of appetite, decrease in blood pressure and body temperature.

Cobalt (II) nitrate hexahydrate: From Fisher MSDS:

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T O

Risk Phrases:

R 22 Harmful if swallowed.

R 42/43 May cause sensitization by inhalation and skin contact.

R 8 Contact with combustible material may cause fire.

R 49 May cause cancer by inhalation.

Safety Phrases:

S 22 Do not breathe dust.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.

WGK (Water Danger/Protection)

CAS# 10026-22-9: 2

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Canada - DSL/NDSL

None of the chemicals in this product are listed on the DSL or NDSL list. Canada - WHMIS

This product has a WHMIS classification of C, D2B.

Canadian Ingredient Disclosure List

CAS# 10026-22-9 is not listed on the Canadian Ingredient Disclosure List.

SECTION 12: Ecological information

Toxicity

Hazardous to the Aquatic Environment - Acute Hazard & Long-Term Hazard

Persistence and degradability

No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

Results of PBT and vPvB assessment

No data available.

Endocrine disrupting properties

No data available.

Other adverse effects

No data available.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

UN Number: 1477

Class: 5.1

Packing Group: II

Proper Shipping Name: NITRATES, INORGANIC, N.O.S. (COBALT NITRATE HEXAHYDRATE)

Hazchem emergency action code (EAC)

1Y

IMDG

UN Number: 1477

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Class: 5.1
Packing Group: II
Proper Shipping Name: NITRATES, INORGANIC, N.O.S. (COBALT NITRATE HEXAHYDRATE)

IATA

UN Number: 1477
Class: 5.1
Packing Group: II
Proper Shipping Name: NITRATES, INORGANIC, N.O.S. (COBALT NITRATE HEXAHYDRATE)

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: NS

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

Preparation information

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)