Safety Data Sheet COBALT (II) CHLORIDE Hexahydrate

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SECTION 1: Identification

GHS Product identifier

Product name	COBALT (II) CHLORIDE Hexahydrate

Other means of identification

Cobalt (II) Chloride Hexahydrate AR (Cobaltous Chloride)	CA093-100G
Cobalt (II) Chloride Hexahydrate AR (Cobaltous Chloride)	CA093-500G
Cobalt (II) Chloride Hexahydrate AR (Cobaltous Chloride)	CA093-5KG
Cobalt (II) Chloride Hexahydrate LR (Cobaltous Chloride)	CL093-100G
Cobalt (II) Chloride Hexahydrate LR (Cobaltous Chloride)	CL093-500G
Cobalt (II) Chloride Hexahydrate TG (Cobaltous Chloride)	CT093-25KG

Recommended use of the chemical and restrictions on use

Absorbent for ammonia, gas masks, electroplating, sympathetic inks, hygrometers, manufacture of vitamin B12, flux for magnesium refining, solid lubricant, dye mordant, catalyst, barometers, analytical and laboratory reagent, fertiliser additive, beer additive and medicinal use.

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.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

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

GHS label elements, including precautionary statements

Pictograms



Signal word **Danger**

Hazard statement(s)

H302	Harmful if swallowed
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
H360	May damage fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
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.
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/physcian if you feel unwell,
P302+P352	IF ON SKIN: Wash with plenty of water/soap
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.
P310	Immediately call a POISON CENTER/doctor/physcian
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physcian
P362+P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 237.93

Components

Component	CAS no.	Concentration
Cobalt (II) chloride, hexahydrate	**7791-13-1**	**100 % (weight)**
CLASSIFICATIONS: Acute toxicity, oral, Cat. 4; Carcinogenicity, Cat. 1; Serious eye damage/eye irritation, Cat. 1; Specific target organ toxicity following repeated exposure, Cat. 1; Toxic to reproduction, Cat. 1; Respiratory sensitizer, Cat. 1; Skin sensitizer, Cat. 1. HAZARDS: No data available.		

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	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. If persistent irritation occurs, obtain medical attention.
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 immediate medical advice. If person suffers from a heart condition or anaemia, seek immediate medical attention.

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 dry chemical, CO2 or water spray.
Large fire: Use water spray, fog or foam - Do NOT use water jets.

Specific hazards arising from the chemical
Material does not burn. Fire or heat will produce irritating, poisonous and/or corrosive gases, hydrogen chloride.

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
Evacuate the area of all non-essential personnel. Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

Wear protective clothing specified for normal operations (see Section 8)

Methods and materials for containment and cleaning up
Do NOT touch or walk through this product. Do NOT touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas. Cover with plastic sheet to minimize spreading. Absorb with earth, sand or other non-combustible material and transfer to container.
Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations.

SECTION 7: Handling and storage

Precautions for safe handling
Avoid generation or accumulation of dusts. Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Wear suitable protective clothing. Only use in well-ventilated areas. In case of insufficient ventilation, wear suitable respiratory equipment. Wash hands and face thoroughly after working with material.

Conditions for safe storage, including any incompatibilities
Store in a cool,dry place. Store away from oxidizing agents. Keep containers securely sealed and protected against physical damage. Keep container tightly closed and in a cool, well-ventilated place Keep away from strong acids and strong bases. Keep away from moisture.

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: (not specified)
Cobalt, metal dust & fume
(as Co)
AU/SWA (Australia): 0.05 mg/m3 TWA inhalation

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
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	Pink to red crystals. On heating forms violet to pale-blue crystals. Aqueous solution is pink to red, but turns blue when heated or when HCl or H2SO4 is added.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flammability	No data available.
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 5 (50g/l H20)
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Soluble in water. Solubility in Organic Solvents: Soluble in alcohols, ether, glycerol and acetone.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	40 mm Hg @ 770°C (53 hPa).
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 1.924
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: On heating loses 4H2O at 52-56°C forming the dihydrate, violet or blue crystals, s.g. 2.477, stable unless exposed directly to moisture. Loses another H2O by 100°C forming the monohydrate, violet, hygroscopic solid. Remaining H2O lost at 120-140°C forming pale-blue anhydrous crystals, s.g. 3.348.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Chemical stability
Stable under normal use conditons. Moisture sensitive.
Absorbs NH3 from air.

Possibility of hazardous reactions
Hazardous Polymerization: Will not occur.

Conditions to avoid
Exposure to moisture.

Avoid storing in direct sunlight and avoid extremes of temperature.

Incompatible materials
Strong oxidising agents, mineral acids, tert-butyl hydroperoxide, potassium and metal halides, sodium dispersions and alkali metals.

Hazardous decomposition products
Hydrogen chloride gas and cobalt oxides.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Acute Toxicity - Oral: LD50 (rat): 766 mg/kg

Ingestion: Toxic if swallowed. This material is destructive to the tissue of mucous membranes lining the digestive tract. Symptoms include of abdominal pain, nausea, vomiting, mild hypertension, rash and tinnitus (ringing in the ears), diarrhoea, loss of appetite, and a decrease in body temperature and blood pressure. Can cause blood damage.

Inhalation: Harmful by inhalation of dust. Causes irritation to the respiratory tract. Symptoms consist of coughing, shortness of breath, nausea and vomiting. Repeated or over exposure to this material may cause asthma, respiratory hypersensitivity and chronic pulmonary effects (i.e. pulmonary fibrosis and pulmonary edema). Inhalation of this material may cause sensitive individuals to develop asthma and eczema.

Skin corrosion/irritation
May cause sensitisation by skin contact. Risk of absorption. Symptoms include of irritation, redness, itching, pain, dermatitis and tinnitus (ringing in the ears).

Serious eye damage/irritation
Harmful if contact eyes. Causes eye irritations with symptoms including redness and pain. May affect vision.

Respiratory or skin sensitization
May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

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).

Reproductive toxicity
Evidence of reproductive effects.

Specific target organ toxicity (STOT) - single exposure
No data available.

Specific target organ toxicity (STOT) - repeated exposure
Causes damage to organs through prolonged or repeated exposure

Aspiration hazard
No data available.

Additional information
Chronic Effects: Large amounts depress erythrocyte production, which may lead to death in children. Other effects include cutaneous flushing, chest pains, nerve deafness, respiratory hypersensitivity, pulmonary fibrosis, pulmonary edema, thyroid hyperplasia, polycythemia, goiter, eczema, myxedema and congestive heart failure.

SECTION 12: Ecological information

Toxicity
Highly toxic to aquatic life. May cause long-term adverse effects in the aquatic environment

Persistence and degradability
This material will dissolve in soil with traces of the cobalt element remaining.

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: 3077
Class: 9
Packing Group: III
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS COBALT (II) CHLORIDE Hexahydrate)

Hazchem emergency action code (EAC)
2X

IMDG
UN Number: 3077
Class: 9
Packing Group: III
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS COBALT (II) CHLORIDE Hexahydrate)

IATA
UN Number: 3077
Class: 9
Packing Group: III
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS COBALT (II) CHLORIDE 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 fot 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 Airbourne 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)