

---

**1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

---

**1.1 Product identifier**

**Product name** COBALT(II) NITRATE HEXAHYDRATE  
**Synonyms** COBALT II NITRATE HEXAHYDRATE

**1.2 Uses and uses advised against**

**Uses** INDUSTRIAL APPLICATIONS • LABORATORY APPLICATIONS

**1.3 Details of the supplier of the product**

**Supplier name** DUBOIS CHEMICALS AUSTRALIA PTY LIMITED (PROWASH)  
**Address** 13-15 Flight Drive, Tullamarine, VIC, 3043, AUSTRALIA  
**Telephone** (03) 8340 3200  
**Website** <http://prowash.com.au>

**1.4 Emergency telephone numbers**

**Emergency** 13 11 26 (Poisons Information Centre)

---

**2. HAZARDS IDENTIFICATION**

---

**2.1 Classification of the substance or mixture**

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

**Physical Hazards**

Oxidizing Solids: Category 2

**Health Hazards**

Acute Toxicity: Oral: Category 4  
Skin Corrosion / Irritation: Category 1B  
Skin Sensitisation: Category 1  
Serious Eye Damage / Eye Irritation: Category 1  
Respiratory Sensitisation: Category 1  
Carcinogenicity: Category 1B  
Toxic to Reproduction: Category 1B  
Specific Target Organ Toxicity (Repeated Exposure): Category 1

**Environmental Hazards**

Aquatic Toxicity (Chronic): Category 1

**2.2 GHS Label elements**

**Signal word** DANGER

**Pictograms**



## PRODUCT NAME COBALT(II) NITRATE HEXAHYDRATE

### Hazard statements

H272	May intensify fire; oxidiser.
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.
H350i	May cause cancer by inhalation.
H360F	May damage fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

### Prevention statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from clothing and other combustible materials.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash 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/hearing protection.
P284	Wear respiratory protection.

### Response statements

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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 CENTRE or doctor/physician.
P321	Specific treatment is advised - see first aid instructions.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use appropriate media to extinguish.
P391	Collect spillage.

### Storage statements

P405	Store locked up.
------	------------------

### Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.
------	--

### 2.3 Other hazards

No information provided.

## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

### 3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
COBALT (II) NITRATE 6-HYDRATE	10026-22-9	600-049-3	>95%
COBALT (II) NITRATE	10141-05-6	233-402-1	Remainder

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

<b>Eye</b>	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
<b>Inhalation</b>	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
<b>Skin</b>	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
<b>Ingestion</b>	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. Rinse mouth out with water and give plenty of water to drink.
<b>First aid facilities</b>	Eye wash facilities and safety shower are recommended.

**PRODUCT NAME COBALT(II) NITRATE HEXAHYDRATE**

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11 for more detailed information on health effects and symptoms.

**4.3 Immediate medical attention and special treatment needed**

Treat symptomatically.

---

**5. FIRE FIGHTING MEASURES**

---

**5.1 Extinguishing media**

Use an extinguishing agent suitable for the surrounding fire.

**5.2 Special hazards arising from the substance or mixture**

Non flammable - oxidising agent. May increase fire intensity. Do not expose to heat and ignition sources. May ignite in contact with incompatible materials. May evolve nitrogen oxides and cobalt oxides when heated to decomposition.

**5.3 Advice for firefighters**

Evacuate area and contact emergency services. Containers may explode in fire. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

**5.4 Hazchem code**

1Y  
1 Coarse Water Spray.  
Y Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Contain spill and run-off.

---

**6. ACCIDENTAL RELEASE MEASURES**

---

**6.1 Personal precautions, protective equipment and emergency procedures**

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

**6.2 Environmental precautions**

Prevent product from entering drains and waterways.

**6.3 Methods of cleaning up**

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust. Only trained personnel should undertake clean up.

**6.4 Reference to other sections**

See Sections 8 and 13 for exposure controls and disposal.

---

**7. HANDLING AND STORAGE**

---

**7.1 Precautions for safe handling**

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

**7.2 Conditions for safe storage, including any incompatibilities**

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Contamination with incompatibles may cause fire or explosion. Ensure packages are adequately labelled, protected from physical damage and sealed when not in use.

**7.3 Specific end uses**

No information provided.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

#### Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Cobalt (metal and inorganic)	SWA [Proposed]	--	0.02	--	--
Cobalt, metal dust & fume (as Co)	SWA [AUS]	--	0.05	--	--

#### Biological limits

Ingredient	Reference	Determinant	Sampling Time	BEI
COBALT (II) NITRATE	ACGIH BEI	Cobalt in urine	End of shift at end of workweek	15 µg/L
COBALT (II) NITRATE 6-HYDRATE	ACGIH BEI	Cobalt in urine	End of shift at end of workweek	15 µg/L

### 8.2 Exposure controls

**Engineering controls** Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. In a laboratory situation use under a fume cupboard or other localised extraction ventilation equipment.

#### PPE

- Eye / Face** Wear dust-proof goggles.
- Hands** Wear PVC or rubber gloves.
- Body** Wear coveralls.
- Respiratory** Where an inhalation risk exists, wear a Class P1 (particulate) / N95 respirator. At high dust levels, wear a Full-face Class P3 (particulate) / N100 respirator.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

<b>Appearance</b>	RED BROWN SOLID
<b>Odour</b>	ODOURLESS
<b>Flammability</b>	NON FLAMMABLE
<b>Flash point</b>	NOT RELEVANT
<b>Boiling point</b>	NOT AVAILABLE
<b>Melting point</b>	55°C to 56°C
<b>Evaporation rate</b>	NOT AVAILABLE
<b>pH</b>	NOT AVAILABLE
<b>Vapour density</b>	NOT AVAILABLE
<b>Relative density</b>	NOT AVAILABLE
<b>Solubility (water)</b>	134 g/100ml
<b>Vapour pressure</b>	NOT AVAILABLE
<b>Upper explosion limit</b>	NOT RELEVANT
<b>Lower explosion limit</b>	NOT RELEVANT
<b>Partition coefficient</b>	NOT AVAILABLE
<b>Autoignition temperature</b>	NOT AVAILABLE
<b>Decomposition temperature</b>	NOT AVAILABLE
<b>Viscosity</b>	NOT AVAILABLE
<b>Explosive properties</b>	NOT AVAILABLE
<b>Oxidising properties</b>	OXIDISING SOLID
<b>Odour threshold</b>	NOT AVAILABLE

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

### 10.2 Chemical stability

Stable under recommended conditions of storage.

### 10.3 Possibility of hazardous reactions

Polymerization is not expected to occur under normal conditions.

### 10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources. Avoid moisture.

### 10.5 Incompatible materials

Oxidising agent. Incompatible with combustible materials, reducing agents (e.g. sulphites), acids (e.g. nitric acid), alkalis (e.g. sodium hydroxide), metals, heat and ignition sources. Incompatible with ammonium compounds and soot.

### 10.6 Hazardous decomposition products

May evolve nitrogen oxides and cobalt oxides when heated to decomposition.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity** Harmful if swallowed. Ingestion may result in burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

**Information available for the ingredients:**

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
COBALT (II) NITRATE 6-HYDRATE	691 mg/kg (rat)	--	--
COBALT (II) NITRATE	434 mg/kg (rat)	--	--

<b>Skin</b>	Causes burns. Contact may result in irritation, redness, pain, rash, dermatitis and possible skin burns.
<b>Eye</b>	Causes burns. Contact may result in irritation, pain, redness, conjunctivitis and corneal burns with possible permanent damage.
<b>Sensitisation</b>	Sufficient data from human studies exists to warrant classification of some cobalt compounds as a dermal sensitiser via skin contact, and a respiratory sensitiser via inhalation.
<b>Mutagenicity</b>	Cobalt nitrate may be suspected of genetic defects, however limited genotoxicity data are available for this group of chemicals.
<b>Carcinogenicity</b>	May cause cancer by inhalation. Cobalt and cobalt compounds are classified as possibly carcinogenic to humans (IARC Group 2B).
<b>Reproductive</b>	May damage fertility. Animal tests show that cobalt compounds possibly cause toxic effects upon human reproduction and malformations in human babies.
<b>STOT - single exposure</b>	Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
<b>STOT - repeated exposure</b>	Causes damage to organs through prolonged or repeated exposure. Repeated exposure to cobalt compounds may result in liver, kidney, lung and heart damage.
<b>Aspiration</b>	Not classified as causing aspiration.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

### 12.2 Persistence and degradability

Not applicable for inorganic substances.

### 12.3 Bioaccumulative potential

Not expected to bioaccumulate.

## PRODUCT NAME COBALT(II) NITRATE HEXAHYDRATE

### 12.4 Mobility in soil

No information provided.

### 12.5 Other adverse effects

Avoid contaminating waterways.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Waste disposal** Wearing personal protective equipment, cover with a WEAK reducing agent (e.g. sodium bisulphite, thiosulphate, or ferrous salt; but NOT sulphur, carbon or strong reducing agent). Mix well and spray with water. Add 3M sulphuric acid if sulphite or ferrous salt is used. Add to container of water and neutralise with soda ash. Collect and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

**Legislation** Dispose of in accordance with relevant local legislation.

## 14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1477	1477	1477
14.2 Proper Shipping Name	NITRATES, INORGANIC, N.O.S. (contains cobaltous nitrate hexahydrate and cobalt (II) nitrate)	NITRATES, INORGANIC, N.O.S. (contains cobaltous nitrate hexahydrate and cobalt (II) nitrate)	NITRATES, INORGANIC, N.O.S. (contains cobaltous nitrate hexahydrate and cobalt (II) nitrate)
14.3 Transport hazard class	5.1	5.1	5.1
14.4 Packing Group	II	II	II

### 14.5 Environmental hazards

Marine Pollutant.

### 14.6 Special precautions for user

Hazchem code	1Y
GTEPG	5A1
EmS	F-A, S-Q

**Other information** The environmentally hazardous substance mark is not required when transported in packages of less than 5 kg/L (UN Model Regulations: Special Provision 375; IATA: Special Provision A197; IMDG: Special Provision 969) or less than 500 kg/L by Australian Road and Rail.

## 15. REGULATORY INFORMATION

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

**Poison schedule** A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

**Classifications** Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

**Inventory listings** **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**  
All components are listed on AIIC, or are exempt.  
**EUROPE: EINECS (European Inventory of Existing Chemical Substances)**  
All components are listed on EINECS, or are exempt.

## 16. OTHER INFORMATION

### Additional information

**RESPIRATORS:** In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

**IARC GROUP 2B - POSSIBLE HUMAN CARCINOGEN.** This product contains an ingredient which has demonstrated sufficient evidence to have been classified by the International Agency for Research into Cancer (IARC) as possibly carcinogenic to humans and whose use should be strictly monitored and controlled.

### PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

### HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

### Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m <sup>3</sup>	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

### Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

**PRODUCT NAME    COBALT(II) NITRATE HEXAHYDRATE**

**Prepared by**

Risk Management Technologies  
5 Ventnor Ave, West Perth  
Western Australia 6005  
Phone: +61 8 9322 1711  
Fax: +61 8 9322 1794  
Email: [info@rmtglobal.com](mailto:info@rmtglobal.com)  
Web: [www.rmtglobal.com](http://www.rmtglobal.com)

**[ End of SDS ]**