

MATERIAL SAFETY DATA SHEET

Product Name: Cobalt chloride hexahydrate

CAS No.: 7791-13-1

Version: 0

1. Identification

Product Code : 90374,91503
Company Name : Advent Chembio Private Limited
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2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
COBALT CHLORIDE HEXAHYDRATE	7791-13-1	90- 100%

3. Hazards Identification**Hazard classification****Health hazards**

Respiratory sensitizer : Category 1
Skin sensitizer : Category 1
Carcinogenicity : Category 1
Acute toxicity (Oral) : Category 3
Toxic to reproduction : Category 1
Germ cell mutagenicity : Category 2

Environmental hazards

Acute hazards to the aquatic environment : Category 1
Chronic hazards to the aquatic environment : Category 1

Labels elements**Hazard symbol**

Signal word : Danger

Hazard statement : Toxic if swallowed.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing genetic defects.
May cause cancer.

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May damage fertility or the unborn child.
Very toxic to aquatic life with long lasting effects.

Precautionary statement**Prevention**

- : Wash thoroughly after handling. Do not eat, drink or smoke when using this product.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wear respiratory protection. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Avoid release to the environment.

Response

- : If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. If exposed or concerned: Get medical advice/attention. Specific treatment (see this label). Wash contaminated clothing before reuse. Collect spillage.

Storage**Disposal**

- : Store locked up.
- : Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification

- : None.

4. First Aid Measures**General information**

- : Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand. Show this safety data sheet to the doctor in attendance.

Ingestion

- : Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation

- : Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration.

Skin contact

- : Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Eye contact

- : Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

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- Most important symptoms/effects, acute and delayed** : Toxic if swallowed. May cause allergic skin reaction. May cause asthma type symptoms. Irritating to eyes, respiratory system and skin.
- Indication of immediate medical attention and special treatment needed** : Treat symptomatically. Symptoms may be delayed.

5. Fire fighting measures

- General fire hazards** : No unusual fire or explosion hazards noted.
- Suitable (and unsuitable) extinguishing media**
- Suitable extinguishing media** : Use fire-extinguishing media appropriate for surrounding materials.
- Unsuitable extinguishing media** : None known.
- Specific hazards arising from the chemical** : During fire, gases hazardous to health may be formed.
- Special protective equipment and precautions for firefighters**
- Special fire fighting procedures** : Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.
- Special protective equipment for fire-fighters** : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental Release Measures

- Personal precautions, protective equipment and emergency procedures** : Keep unauthorized personnel away. Use personal protective equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Methods and material for containment and cleaning up** : Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.
- Notification Procedures** : Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.
- Environmental precautions** : Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

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7. Handling and Storage

- Precautions for safe handling** : Use personal protective equipment as required. Do not breathe mist or vapor. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash hands thoroughly after handling. Avoid contact with skin. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Conditions for safe storage, including any incompatibilities** : Store locked up. Store in a well-ventilated place. Keep container tightly closed.

8. Exposure Controls Personal Protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
COBALT CHLORIDE (HYDRATED FORM) - as Co	TWA	0.02 mg/m ³	US. ACGIH Threshold Limit Values (2011)
COBALT CHLORIDE (HYDRATED FORM)	ST ESL	0.2 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	AN ESL	0.02 mg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	ST ESL	0.2 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	AN ESL	0.02 mg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)

Biological limit values

Chemical identity	Exposure Limit values	Source
COBALT CHLORIDE (HYDRATED FORM) (Cobalt: Sampling time: End of shift at end of work week.)	1 µg/l (Blood)	ACGIH BEL (03 2013)

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	15 µg/g (Creatinine in urine)	ACGIH BEL (03 2013)
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Appropriate engineering controls : No data available.

Individual protection measures, such as personal protective equipment

General information : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Eye/face protection : Wear safety glasses with side shields (or goggles).

Hand protection : Chemical resistant gloves.

Other : Wear suitable protective clothing.

Respiratory protection : In case of inadequate ventilation use suitable respirator. Air-purifying respirator with a high efficiency particulate filter.

Hygiene measures : Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using the product. Avoid contact with eyes, skin, and clothing.

9. Physical and Chemical Properties

Appearance : Solid Rose red Crystals or powder.

Odor : Odorless

pH : 4.6

Melting point/freezing point : 86 °C

Initial boiling point and boiling range : 110 °C (loses water of hydration)

Flash Point : Not applicable

Vapor pressure : 5.33 kPa (770 °C)

Vapor density : No data available.

Relative density : 1.92 (20 °C)

Solubility in water : 767 g/l (0 °C)

Solubility (other) : No data available.

Formula : $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$

Molecular Weight : 237.93 g/mol

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Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Material is stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Conditions to avoid	:	Contact with incompatible materials.
Incompatible materials	:	Strong mineral acids. Strong oxidizing agents. metal halides.
Hazardous decomposition products	:	Thermal decomposition emits toxic fumes of chlorine.

11. Toxicological Information**Information on likely routes of exposure**

Ingestion	:	Toxic if swallowed.
Inhalation	:	May cause irritation to the respiratory system.
Skin contact	:	Causes skin irritation .
Eye contact	:	Causes serious eye irritation.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

Oral Product	:	LD 50 (Rat): 80 mg/kg .
Dermal Product	:	No data available.
Inhalation Product	:	No data available.
Repeated dose toxicity Product	:	No data available.
Skin corrosion/irritation Product	:	Irritating to skin.
Serious eye damage/eye irritation Product	:	Irritating to eyes.
Respiratory or skin sensitization Product	:	May cause sensitization by inhalation and skin contact.
Carcinogenicity Product	:	May cause cancer.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans DIOXANE	:	Overall evaluation: 2B. Possibly carcinogenic to humans. Overall evaluation: 2B. Possibly carcinogenic to humans.
US. National Toxicology Program (NTP) Report on Carcinogens DIOXANE	:	No carcinogenic components identified.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050	:	No carcinogenic components identified.
Germ cell mutagenicity	:	
In vitro Product	:	May cause genetic defects.
In vivo Product	:	May cause genetic defects.
Reproductive toxicity Product	:	May damage fertility or the unborn child.
Specific target organ toxicity -	:	None known.

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single exposure Product

Specific target organ toxicity - : Blood, Liver, Lungs, Kidney, Bones

repeated exposure Product

Aspiration hazard Product : Not classified.

Other effects : None known.

12. Ecological Information

Ecotoxicity

Acute hazards to the aquatic environment :

Fish Product : LC 50 (Carp (Cyprinus carpio), 96 h): 0.33 mg/l

Aquatic invertebrates Product : EC 50 (Water flea (Daphnia magna), 48 h): 1.4 mg/l

Chronic hazards to the aquatic environment :

Fish Product : No data available.

Aquatic invertebrates Product : No data available.

Toxicity to Aquatic Plants Product: : No data available.

Persistence and degradability

Biodegradation Product : The product is not expected to be biodegradable.

BOD/COD ratio Product : No data available.

Bioaccumulative potential

Bioconcentration factor (BCF) Product : No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow) Product : No data available.

Mobility in soil : The product is water soluble and may spread in water systems.

Other adverse effects : Very toxic to aquatic life with long lasting effects.

13. Disposal consideration

Disposal instructions : Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated packaging : Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport Information

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant

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DOT	UN 3077	COBALT(II) CHLORIDE	9	III	No
IMDG	UN 3077	COBALT(II) CHLORIDE	9	III	No
IATA	UN 3077	COBALT(II) CHLORIDE	9	III	No

15. Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

16. Other Information

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

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