



SAFETY DATA SHEET

**PhytoTechnology
Laboratories®**

1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: Cobalt Chloride, Hexahydrate, ACS Reagent
PRODUCT NUMBER: C350
COMPANY INFO: *PhytoTechnology Laboratories®*
PO Box 12205, Shawnee, KS 66282-2205
Phone: 1-888-749-8682 or 1-913-341-5343; Fax: 1-888-449-8682 or 1-913-341-5442
www.phytotechlab.com
EMERGENCY PHONE NUMBER: 1-800-535-5053 - US Only
1-352-323-3500 - International
RECOMMENDED USE: For Research Use Only

RESTRICTIONS ON USE: Products sold by *PhytoTechnology Laboratories®* are intended for research and laboratory use only. Products are not to be used as human or animal therapeutics, cosmetics, agricultural or pesticidal products, food additives, or as household chemicals.

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification:

H302 – Acute toxicity, Oral (Category 4)
H334 – Respiratory sensitization (Category 1)
H317 – Skin sensitization (Category 1)
H350 – Carcinogenicity (Category 1B)
H360 – Reproductive toxicity (Category 1B)
H400 – Acute aquatic toxicity (Category 1)
H410 – Chronic aquatic toxicity (Category 1)

GHS Label elements, including hazard and precautionary statements:



Signal Word: **Danger**

Hazard Statements:

H302 – Harmful if swallowed.
H317 – May cause an allergic skin reaction.
H334 – May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341 – Suspected of causing genetic defects.
H350 – May cause cancer.
H360 – May damage fertility or the unborn child.
H410 – Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

P202 – Do not handle until all safety precautions have been read and understood.
P261 – Avoid breathing dust.
P273 – Avoid release to the environment.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P304 + P341- IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308 + P313 – IF exposed or concerned: Get medical advice/attention.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Cobalt(II) Chloride
CAS No: 7791-13-1
Formula: $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$
Molecular Weight: 237.93 g/mol
EC No.: 231-589-4

Ingredient	CAS Number	Percent	Hazardous
Cobalt Chloride, Hexahydrate	7791-13-1	>98 %	OSHA PEL: 0.08 mg (Co)/m ³ ACGIH TLV: 0.05 mg (Co)/m ³

4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Route of Entry	Symptoms	First Aid Procedures
Ingestion	May cause irritation if swallowed	If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. Get medical attention.
Inhalation	May cause irritation to respiratory tract	Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. Get medical attention.
Eye Contact	Direct contact may cause irritation. May cause redness, tearing, or blurred vision.	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists.
Skin Contact	Irritating. May cause reddening, itching or inflammation.	Wash area thoroughly with soap and water. Remove and wash contaminated clothing. Get medical attention if irritation persists.

Most Important Symptoms or Effects, Both Acute and Delayed:

See section 2 and/or section 11

Recommendation for Immediate Medical Care and Special Treatment Needed:

No data available

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:	Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.
Special Protective Equipment and Precaution for Firefighters:	In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance.
Hazardous Combustion Products:	May emit toxic fumes under fire conditions.
Toxic Gases Produced:	Hydrogen chloride gas, chlorine

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protection recommended in Section 8. Avoid dust formation. Avoid breathing dust, vapors, mist or gas. Ensure adequate ventilation, especially in confined areas. Evacuate personnel to safe areas.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Method of Containment and Cleanup: Wear suitable protective clothing. Avoid dust formation. Carefully sweep up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water. Do not let product enter drains. Discharge into the environment must be avoided.

7. HANDLING AND STORAGE

Precaution for Safe Handling: Avoid contact with skin and eyes. Avoid dust formation and aerosols. Avoid incompatible substances. Material may become hygroscopic if it loses the waters. Provide adequate exhaust ventilation at places where dust is formed. Wash thoroughly after use.

Conditions for Safe Storage: Keep in a tightly closed container and store in a cool, dry, and well-ventilated area.

Incompatibilities: Strong oxidizing agents, alkali metals

Recommended Storage Temperature: Room Temperature

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA's Permissible Exposure Limits (PELs): 0.08 mg/m³

ACGIH's Threshold Limit Values (TLVs): 0.02 mg/m³

Engineering Controls: Handle in accordance to general industrial hygiene and safety practice.

Personal Protective Equipment (PPE):

- Eye/Face Protection: Chemical safety glasses or goggles. Have eye-washing facilities readily available where eye contact can occur.
- Skin Protection: Protective gloves
- Body Protection: Lab coat
- Respiratory Protection: Appropriate respirator

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Purple to red powder

pH (0.0001 g/L): Under Development (5.25 – 6.25 suspected range)

Solubility: Soluble in Water

Melting Range: 87 °C – loses four waters at 52-56 °C forming blue or violet dihydrate crystals

Vapor Density: No data available

Vapor Pressure: 53 hPA (40 mmHg)

Specific Gravity: No data available

Odor: Odorless

Odor Threshold: No data available

Viscosity: No data available

Relative Density: 1.92 g/cm³

Evaporation Rate: No data available

Initial Boiling Point and Boiling Range: No data available

Flammability (solid, gas): No data available

Partition coefficient: No data available

n-octanol/water): No data available

Auto-ignition Temperature: No data available

Decomposition Temperature: No data available

Flash Point (Closed Cup): No data available

Flammable Limits: Upper (%) – No data available Lower (%) – No data available

10. STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical Stability:	Stable under normal conditions of use – This material will lose four of the waters as it is heated forming the blue colored dihydrate. This product is hygroscopic
Possibility of Hazard Reactions:	Will not occur
Conditions to Avoid:	Excessive heat, moist air
Incompatibles Materials:	Strong oxidizing agents, alkali metals
Hazardous Decomposition Products:	Hydrogen chloride gas, chlorine

11. TOXICOLOGICAL INFORMATION

Toxicity:	LD ₅₀ (Oral-Rat)(mg/Kg):	766
	LD ₅₀ (Dermal-Rat)(mg/Kg):	>2001
	LD ₅₀ (IP-Mouse)(mg/Kg):	90
Carcinogenicity:	Possible human carcinogen	
	NTP:	No
	IARC:	Group 2B – Possibly carcinogenic to humans
	Z List:	No
Germ cell mutagenicity:	OSHA Reg:	No
	In vitro tests showed mutagenic effects	
	Presumed human reproductive toxicant	
	Symptoms Associated with Overexposure: Irritation, itching, gastrointestinal upset, erythrocyte production depression, chest pains, dermatitis, tinnitus, nausea, vomiting, nerve deafness, congestive heart failure, thyroid hyperplasia, possible death in children, possible reproductive, mutagenic, or tumorigenic effects	
Specific Target Organ Toxicity:	Single Exposure:	No data available
	Repeated Exposure:	No data available
Target Organs:	Liver	
Medical Conditions Aggravated By Exposure:	Pre-existing heart or lung problems	
Routes of Entry:	Ingestion, inhalation, skin and eye contact	
NIOSH/RTECS NO:	GG0200000	

The toxicological properties of this product have not been thoroughly investigated

12. ECOLOGICAL INFORMATION

Toxicity:	LC50 – Carp – 0.33 mg/L – 96 hrs
	EC50 – water flea – 1.1 – 1.6 mg/L – 48 hrs
	EC50 – fresh water algae – 0.5 mg/L – 96 hrs
Persistence and Degradability:	No data available
Bioaccumulative Potential:	No data available
Mobility in Soil:	No data available
Other Adverse Effects:	No data available

13. DISPOSAL CONSIDERATION

Disposal Procedure:	Dispose in accordance with all applicable federal, state, and local environmental regulations.
EPA Hazardous Waste Number:	No data available

14. TRANSPORT INFORMATION

Domestic (D.O.T.): Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)

Hazard Class: N/A

UN/NA: N/A

Labels: N/A

International:

IMDG: Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Cobalt dichloride hexahydrate)

Hazard Class: Class: 9 Packing group: III EMS NO.: F-A, S-F

UN/NA: 3077

Marine Pollutant: Yes

IATA: Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Cobalt dichloride hexahydrate)

Hazard Class: Class: 9 Packing group: III EMS NO.: F-A, S-F

UN/NA: 3077

15. REGULATORY INFORMATION

TSCA: No

SARA TITLE III:

Section 302 (EHS) Ingredients: No

Section 313 Ingredients: Yes – Cobalt compound of concentration >0.1 %

Section 304 (EHS/CERCLA) Ingredients: No

Section 311/312 Hazard: Acute Health Hazard, Chronic Health Hazard

Massachusetts Right to Know Components: No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components: CAS NO.: 7791-13-1 Cobalt dichloride hexahydrate

New Jersey Right to Know Components: CAS NO.: 7791-13-1 Cobalt dichloride hexahydrate

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating:	Health Hazard	Chronic Health Hazard	Flammability	Physical Hazard
	3	*	0	0
NFPA Rating:	Health Hazard	Fire Hazard	Reactivity Hazard	Special Hazard
	3	0	0	

*Chronic Hazard: Chronic (long-term) health effects may result from repeated overexposure.

PhytoTechnology Laboratories® provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. The above information is intended to be used only as a guide to the appropriate precautionary handling of this material by a properly trained person. PhytoTechnology Laboratories® shall not be held liable for any damage resulting from handling or from contact with the above product. This product is intended for LABORATORY USE ONLY. Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticidal products, food additives or as household chemicals.

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