

Material Safety Data Sheet

Cobalt(II) Chloride Hexahydrate

ACC# 05345

Section 1 - Chemical Product and Company Identification

MSDS Name: Cobalt(II) Chloride Hexahydrate**Catalog Numbers:** AC192090000, AC192090010, AC192091000, AC192092500, AC192860000, AC192860250, AC423570000, AC423570050, S71930, S72893, S75089, S93179, 42357-1000, 42357-5000, C371-100, C371-500, C371500LC**Synonyms:** Cobaltous chloride hexahydrate; Cobalt muriate hexahydrate.**Company Identification:**Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410**For information, call:** 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7791-13-1	Cobalt(II) chloride hexahydrate	100	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: purple solid.

Warning! Causes irritation and possible burns by all routes of exposure. Possible cancer hazard. May cause cancer based on animal data. May cause allergic respiratory and skin reaction. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May be harmful if swallowed. May cause blood abnormalities. May cause lung damage. May cause adverse reproductive effects. Dangerous for the environment.

Target Organs: Lungs, cardiovascular system, red blood cells, skin, male reproductive system.**Potential Health Effects****Eye:** Causes eye irritation and possible burns.**Skin:** May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Causes skin irritation and possible burns.**Ingestion:** May interfere with blood clotting. May cause thyroid abnormalities. Causes digestive tract irritation with possible burns.

Inhalation: Causes delayed lung injury. May cause asthmatic attacks due to allergic sensitization of the respiratory tract. May cause asthma and shortness of breath. Causes respiratory tract irritation with possible burns.

Chronic: Cobalt compounds may cause cancer based upon animal studies. Adverse reproductive effects have been reported in animals.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes.

Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Flash Point: Noncombustible.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with skin and eyes. Keep container tightly closed. Avoid ingestion and inhalation.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Cobalt(II) chloride hexahydrate	0.02 mg/m ³ TWA (as Co) (listed under Cobalt, inorganic compounds).	none listed	none listed
Cobalt dichloride anhydrous	0.02 mg/m ³ TWA (as Co) (listed under Cobalt, inorganic compounds).	none listed	none listed

OSHA Vacated PELs: Cobalt(II) chloride hexahydrate: No OSHA Vacated PELs are listed for this chemical. Cobalt dichloride anhydrous: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Appearance: purple

Odor: none reported

pH: 4.6 @ M solution.

Vapor Pressure: Negligible.

Vapor Density: Not available.

Evaporation Rate: Negligible.

Viscosity: Not available.

Boiling Point: 1048.9 deg C

Freezing/Melting Point: 87 deg C

Decomposition Temperature: 110 deg C

Solubility: 77 g/100ml (0 C)

Specific Gravity/Density: 1.924

Molecular Formula: CoCl₂·6H₂O

Molecular Weight: 237.9196

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Dust generation, moisture, excess heat.

Incompatibilities with Other Materials: Strong oxidizers and alkali metals. Absorbs NH₃ from air. .

Hazardous Decomposition Products: Hydrogen chloride, cobalt/cobalt oxides.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 7791-13-1: GG0200000

CAS# 7646-79-9: GF9800000

LD50/LC50:

CAS# 7791-13-1:

Oral, rat: LD50 = 766 mg/kg;

Skin, rat: LD50 = >2 gm/kg;

CAS# 7646-79-9:

Oral, mouse: LD50 = 80 mg/kg;

Oral, rat: LD50 = 80 mg/kg;

Oral, rat: LD50 = 418 mg/kg;

Reproductive hazard: Mouse: Oral Dose: 182 mg/kg (13 Weeks, Male) Paternal effects: Testes, epididymis, sperm duct.

Carcinogenicity:

CAS# 7791-13-1:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans (listed as 'Cobalt, inorganic compounds').
- **California:** Not listed.
- **NTP:** Not listed.
- **IARC:** Group 2B carcinogen

CAS# 7646-79-9:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans (listed as 'Cobalt, inorganic compounds').
- **California:** Not listed.
- **NTP:** Not listed.
- **IARC:** Group 2B carcinogen

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.

Mutagenicity: Mutagenic effects have occurred in experimental animals.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O. (COBALTOUS CHLORIDE)	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O. (COBALTOUS CHLORIDE)
Hazard Class:	8	8
UN Number:	UN3260	UN3260
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7791-13-1 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

CAS# 7646-79-9 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 7791-13-1: immediate, delayed.

CAS # 7646-79-9: immediate, delayed.

Section 313

This material contains Cobalt(II) chloride hexahydrate (listed as Cobalt, inorganic compounds), 100%, (CAS# 7791-13-1) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Cobalt dichloride anhydrous (listed as Cobalt, inorganic compounds), -%, (CAS# 7646-79-9) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 7791-13-1 (listed as Cobalt compounds) is listed as a hazardous air pollutant (HAP).

CAS# 7646-79-9 (listed as Cobalt compounds) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7791-13-1 can be found on the following state right to know lists: New Jersey, (listed as Cobalt compounds), Pennsylvania, (listed as Cobalt compounds), Minnesota, (listed as Cobalt, inorganic compounds).

CAS# 7646-79-9 can be found on the following state right to know lists: New Jersey, (listed as Cobalt compounds), Pennsylvania, (listed as Cobalt compounds), Minnesota, (listed as Cobalt, inorganic compounds).

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 N

Risk Phrases:

R 22 Harmful if swallowed.

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

R 49 May cause cancer by inhalation.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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.

S 60 This material and its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 7791-13-1: 2

CAS# 7646-79-9: 2

Canada - DSL/NDSL

CAS# 7646-79-9 is listed on Canada's DSL List.

Canada - WHMIS

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 7791-13-1 is not listed on the Canadian Ingredient Disclosure List.

CAS# 7646-79-9 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information
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MSDS Creation Date: 12/12/1997

Revision #15 Date: 11/13/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.