



Health	2
Fire	0
Reactivity	0
Personal Protection	

# Material Safety Data Sheet

## Cobaltous Chloride Colorimetric Solution MSDS

### Section 1: Chemical Product and Company Identification

**Product Name:** Cobaltous Chloride Colorimetric Solution

**Catalog Codes:** SLC5050

**CAS#:** Mixture.

**RTECS:** Not applicable.

**TSCA:** TSCA 8(b) inventory: Cobalt chloride hexahydrate; Hydrochloric acid; Water

**CI#:** Not available.

**Synonym:**

**Chemical Name:** Cobaltous Chloride, Colorimetric Solution

**Chemical Formula:** Not applicable.

**Contact Information:**

**Sciencelab.com, Inc.**

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: [ScienceLab.com](http://ScienceLab.com)

**CHEMTREC (24HR Emergency Telephone), call:**

1-800-424-9300

**International CHEMTREC, call:** 1-703-527-3887

**For non-emergency assistance, call:** 1-281-441-4400

### Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS #	% by Weight
Cobalt chloride hexahydrate	7791-13-1	6
Hydrogen chloride	7647-01-0	0.925
Water	7732-18-5	93.1

**Toxicological Data on Ingredients:** Cobalt chloride hexahydrate: ORAL (LD50): Acute: 766 mg/kg [Rat].

### Section 3: Hazards Identification

**Potential Acute Health Effects:**

Hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant), of ingestion, of inhalation (lung sensitizer). Slightly hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive). Non-corrosive for lungs. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath.

**Potential Chronic Health Effects:**

Slightly hazardous in case of skin contact (sensitizer). **CARCINOGENIC EFFECTS:** Classified 3 (Not classifiable for human.) by IARC [Hydrogen chloride]. **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. [Cobalt chloride hexahydrate]. Mutagenic for bacteria and/or yeast. [Cobalt chloride hexahydrate]. **TERATOGENIC EFFECTS:** Not available.

**DEVELOPMENTAL TOXICITY:** Classified Reproductive system/toxin/male [POSSIBLE] [Cobalt chloride hexahydrate]. The substance may be toxic to blood, kidneys, lungs, liver, mucous membranes, upper respiratory tract, skin, eyes, , pancreas, teeth, thyroid. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

#### Section 4: First Aid Measures

**Eye Contact:**

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

**Skin Contact:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact:**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious Inhalation:**

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**Ingestion:**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:** Not available.

#### Section 5: Fire and Explosion Data

**Flammability of the Product:** Non-flammable.

**Auto-Ignition Temperature:** Not applicable.

**Flash Points:** Not applicable.

**Flammable Limits:** Not applicable.

**Products of Combustion:** Not available.

**Fire Hazards in Presence of Various Substances:** Not applicable.

**Explosion Hazards in Presence of Various Substances:** Non-explosive in presence of open flames and sparks, of shocks.

**Fire Fighting Media and Instructions:** Not applicable.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

#### Section 6: Accidental Release Measures

**Small Spill:**

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

**Large Spill:**

Corrosive liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

## Section 7: Handling and Storage

**Precautions:**

Keep locked up.. Keep container dry. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

**Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area.

## Section 8: Exposure Controls/Personal Protection

**Engineering Controls:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

**Personal Protection:**

Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:**

Hydrogen chloride STEL: 7.5 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States] STEL: 5 (ppm) from ACGIH (TLV) [United States] CEIL: 5 (ppm) from NIOSH CEIL: 7.5 (mg/m<sup>3</sup>) from NIOSH CEIL: 5 (ppm) from OSHA (PEL) [United States] CEIL: 7 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] Consult local authorities for acceptable exposure limits.

## Section 9: Physical and Chemical Properties

**Physical state and appearance:** Liquid.

**Odor:** Nearly odorless

**Taste:** Not available.

**Molecular Weight:** Not applicable.

**Color:** Pink Red. Clear

**pH (1% soln/water):** Neutral.

**Boiling Point:** 100°C (212°F)

**Melting Point:** Not available.

**Critical Temperature:** Not available.

**Specific Gravity:** 1.05 (Water = 1)

**Vapor Pressure:** The highest known value is 2.3 kPa (@ 20°C) (Water).

**Vapor Density:** The highest known value is 0.62 (Air = 1) (Water).

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water, diethyl ether, acetone.

**Solubility:**

Easily soluble in cold water, hot water. Soluble in diethyl ether, acetone.

## Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Incompatible materials

**Incompatibility with various substances:** Slightly reactive to reactive with oxidizing agents, organic materials, metals, alkalis.

**Corrosivity:** Non-corrosive in presence of glass.

**Special Remarks on Reactivity:**

It reacts with oxidizers releasing chlorine gas. Incompatible with alkalis, amines, metals [copper and alloys (brass), zinc (galvanized materials)], hydroxides, organic materials, alkali metals, carbides, borides, metal oxides, vinyl acetate, acetylides, sulphides, phosphides, cyanides, carbonates, It can react with formaldehyde. Reacts with most metals to produce flammable Hydrogen gas. Also incompatible with alkali metals.

**Special Remarks on Corrosivity:**

This compound is highly corrosive when in solution (especially to most metals except: gold, mercury, platinum, silver, and tantalum). The anhydrous gas is not corrosive . (Hydrogen chloride)

**Polymerization:** Will not occur.

## Section 11: Toxicological Information

**Routes of Entry:** Absorbed through skin. Eye contact. Inhalation. Ingestion.

**Toxicity to Animals:** Acute oral toxicity (LD50): 766 mg/kg [Rat]. (Cobalt chloride hexahydrate).

**Chronic Effects on Humans:**

CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for human.) by IARC [Hydrogen chloride]. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Cobalt chloride hexahydrate]. Mutagenic for bacteria and/or yeast. [Cobalt chloride hexahydrate]. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/male [POSSIBLE] [Cobalt chloride hexahydrate]. Contains material which may cause damage to the following organs: blood, kidneys, lungs, liver, mucous membranes, upper respiratory tract, skin, eyes, , pancreas, teeth, thyroid.

**Other Toxic Effects on Humans:**

Hazardous in case of skin contact (irritant, sensitizer), of ingestion, of inhalation (lung sensitizer). Slightly hazardous in case of skin contact (corrosive, permeator).

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:**

May cause adverse reproductive effects and birth defects. May cause cancer (tumorigenic) based on animal studies. May affect genetic material.

**Special Remarks on other Toxic Effects on Humans:**

Acute Potential Health Effects: Mildly Corrosive!! Skin: Causes irritation and possible burns. May be absorbed through the skin. It may affect the liver if it is absorbed through the skin. Eyes: Causes irritation and possible burns. May affect vision (corneal opacity and degeneration of optic nerve). Inhalation: May cause respiratory tract irritation. Ingestion: May be harmful if swallowed. May cause gastrointestinal (digestive) tract irritation with nausea, vomiting hypermotility, and diarrhea possible burns. May affect behavior(somnolence, convulsions, tremor), heart/cardiovascular system (hypotension, cardiac failure), thyroid gland (goiter), and metabolism (weight loss), blood (polycythemia, decreased red blood cell count, impair aggregation of platelets, changes in blood clotting time, changes in thromboplastic activity), liver, kidneys. Chronic Potential Health Effects: Ingestion: Prolonged or repeated ingestion may affect liver, kidneys, blood, behavior, lungs, thyroid gland

## Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

**Special Remarks on the Products of Biodegradation:** Not available.

## Section 13: Disposal Considerations

**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

## Section 14: Transport Information

**DOT Classification:** Class 8: Corrosive material

**Identification:** : Corrosive Liquid, n.o.s.(Cobalt Chloride, Hydrochloric Acid Solution) UNNA: 1760 PG: III

**Special Provisions for Transport:** Not available.

## Section 15: Other Regulatory Information

**Federal and State Regulations:**

Connecticut hazardous material survey.: Hydrochloric acid Illinois toxic substances disclosure to employee act: Hydrochloric acid Illinois chemical safety act: Hydrochloric acid New York release reporting list: Hydrochloric acid Rhode Island RTK hazardous substances: Hydrochloric acid Pennsylvania RTK: Hydrochloric acid Minnesota: Hydrochloric acid Massachusetts RTK: Hydrochloric acid Massachusetts spill list: Hydrochloric acid New Jersey: Hydrochloric acid New Jersey spill list: Hydrochloric acid Louisiana RTK reporting list: Hydrochloric acid Louisiana spill reporting: Hydrochloric acid TSCA 8(b) inventory: Cobalt chloride hexahydrate; Hydrochloric acid; Water TSCA 4(a) proposed test rules: Hydrochloric acid SARA 302/304/311/312 extremely hazardous substances: Hydrochloric acid SARA 313 toxic chemical notification and release reporting: Hydrochloric acid 2.5% CERCLA: Hazardous substances.: Hydrochloric acid: 5000 lbs. (2268 kg);

**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications:**

**WHMIS (Canada):** CLASS E: Corrosive liquid.

**DSCL (EEC):**

R34- Causes burns. R42/43- May cause sensitization by inhalation and skin contact. S23- Do not breathe gas/fumes/vapour/ spray [\*\*\*] S24/25- Avoid contact with skin and eyes. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

**HMIS (U.S.A.):**

**Health Hazard:** 2

**Fire Hazard:** 0

**Reactivity:** 0

**Personal Protection:**

**National Fire Protection Association (U.S.A.):**

**Health:** 1

**Flammability:** 0

**Reactivity:** 0

**Specific hazard:**

**Protective Equipment:**

Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

**Section 16: Other Information**

**References:** Not available.

**Other Special Considerations:** Not available.

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