

CLIP, Chemical Laboratory Information Profile

"Only when you know the hazards, can you take the necessary precautionary measures."

Cobalt(II) Chloride Hexahydrate $\text{CoCl}_2 \cdot 6(\text{H}_2\text{O})$ **CAS No.: 7791-13-1**

Synonyms: Cobaltous chloride hexahydrate, Cobalt dichloride hexahydrate

Physical Properties

Solid red (or pink) crystals that lose water of hydration and become blue in an environment with low humidity; the process is reversible.
 Vapor pressure at 20 °C: negligible
 Melting point: 110 °C, loses water at 118 °C
 Decomposes when heated 1049 °C

Exposure Limits

OSHA PEL: 0.1 mg/m³ (as Co[†])
 ACGIH TLV: 0.02 mg/m³ (as Co)

† Applicable to metal dust and fumes

Hazardous Characteristics

Overall toxicity	Flammability	Destructive to skin/eye	Absorbed through skin	Sensitizer?	Self-reactive?	Incompatible with: Alkali metals.*
3	0	2	0	No	No	

0: None (or very low); 1: Slight; 2: Moderate; 3: High; 4: Severe.

***Reactivity Hazards**

The reaction with alkali metals can be violent; in addition, the finely divided cobalt that is produced is pyrophoric. See Bretherick's *Handbook of Reactive Chemical Hazards* for details and for other incompatibilities.

Cited as known to be or reasonably anticipated to be carcinogenic in NTP-9? No Identified as a reproductive toxin in Frazier and Hage, *Reproductive Hazards of the Workplace?* Insufficient data

Typical symptoms of acute exposures:

In the eyes, inflammation, pain. On the skin, inflammation. If inhaled, coughing, nausea, red complexion, ringing in the ears. If ingested, abdominal pain, red complexion, ringing in the ears, vomiting.

Principal target organ(s) or system(s):

Skin, heart, kidney, thyroid gland.

Storage Requirements

Store with other poisons in a cool, dry, well-ventilated and locked location.

Additional Remarks

The OSHA PEL cited above does not apply to cobalt(II) chloride, it applies to some other inorganic forms of cobalt; it has been cited here for information purposes. The ACGIH TLV however, applies to all inorganic compounds of cobalt.

Notes**ReadMe**

This Chemical Laboratory Information Profile is *not* a Material Safety Data Sheet. It is a brief summary for teachers and their students that describes some of the hazards of this chemical as it is typically used in laboratories. On the basis of your knowledge of these hazards and before using or handling this chemical, *you need to select the precautions and first-aid procedures to be followed.* For that information as well as for other useful information, refer to Material Safety Data Sheets, container labels, and references in the scientific literature that pertain to this chemical.

Reproductive Toxins

Some substances that in fact are reproductive toxins are not yet recognized as such. For the best readily available and up-to-date information, refer to "DART/ETIC". See the TOXNET home page at <http://www.sis.nlm.nih.gov> and click on "Toxicology search". *Note that some of the data in DART/ETIC have not been peer-reviewed.* See also Linda M. Frazier and Marvin L. Hage, *Reproductive Hazards of the Workplace*; Wiley, 1998; and T. H. Shepard, *Catalog of Teratogenic Agents*, 9th ed.; Johns Hopkins University Press, 1998.

Abbreviations

ACGIH TLV—American Conference of Governmental Industrial Hygienists—Threshold Limit Value. C—Ceiling. CAS—Chemical Abstracts Service. mg/m³—milligrams per cubic meter. µg/m³—micrograms per cubic meter. NA—Not applicable. NE—Not established. NI—No information. NTP-9—National Toxicology Program, Ninth Annual Report on Carcinogens. OSHA PEL—Occupational Safety and Health Administration—Permissible Exposure Limit. ppm—parts per million. STEL/C—Short-term exposure limit and ceiling.

Prepared by: Jay A. Young

Date of preparation: December 10, 2002