

GHS Classification

ID298

Copper dichloride

CAS 7447-39-4

Date Classified: Jun. 20, 2006 (Environmental Hazards: Mar. 31, 2006)

Physical Hazards

Reference Manual: GHS Classification Manual (Feb. 10, 2006)

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Explosives	Not applicable	—	—	—	Containing no chemical groups with explosive properties
2 Flammable gases	Not applicable	—	—	—	Classified as "solid" according to GHS definition
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Not applicable	—	—	—	Classified as "solid" according to GHS definition
5 Gases under pressure	Not applicable	—	—	—	Classified as "solid" according to GHS definition
6 Flammable liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
7 Flammable solids	Not classified	—	—	—	Non-flammable (HSDB, 2006)
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Not classified	—	—	—	Non-combustible (HSDB, 2006)
11 Self-heating substances and mixtures	Not classified	—	—	—	Non-combustible (HSDB, 2006)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	—	—	—	Stable to water (water solubility: 73parts/100parts(20degC), HSDB(2006))
13 Oxidizing liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
14 Oxidizing solids	Not classified	—	—	—	No data available, though being inorganic compounds containing chlorine. Classified into Class 8 (UN#2802) (UN Recommendations on the Transport of Dangerous Goods)
15 Organic peroxides	Not applicable	—	—	—	Not organic compounds
16 Corrosive to metals	Classification not possible	—	—	—	Test methods applicable to solid substances are not available

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 3	Skull and crossbones	Danger	Toxic if swallowed	Based on the rat LD50 (oral route) value of 140mg/kg (EHC 200 (1998)).
1 Acute toxicity (dermal)	Classification not possible	—	—	—	No data available
1 Acute toxicity (inhalation: gas)	Not applicable	—	—	—	Due to the fact that the substance is "solid" according to the GHS definition and inhalation of its gas is not expected.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	—	—	—	No data available
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	Based on the description in EHC 200 (1998) of the human health effects of copper (though no data are available on copper chloride per se): "These data provide suggestive evidence that copper may be irritative to the skin." The substance is thus considered a skin irritant (though the severity of the effects is unknown), and hence can be classified into Category 2 or 3. However, it should be placed in Category 2 from the viewpoint of safety.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	Based on the evidence of "severe effects" from the rabbit eye irritation tests (HSDB (2005)), and the human evidence (EHC 200 (1998)): "Eye irritation was observed among workers occupationally exposed to copper dust." The substance is thus considered irritating to the eye (though the severity of the effects is unknown) and classified into 2A-2B. It should be placed in Category 2A from the viewpoint of safety, if further
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Category 1	(Respiratory sensitization) – (Skin sensitization) Exclamation mark	(Respiratory sensitization) – (Skin sensitization) Warning	(Respiratory sensitization) – (Skin sensitization) May cause allergic skin reaction	Respiratory sensitization: No data available Skin sensitization: Based on the description in EHC 200 (1998) of the effects on human health: "Copper and its salts may induce allergic dermatitis. Clinical signs include smarting, reddening, swelling, formation of vesicles and pustules." Also due to the fact that copper is classified into "Skin Sensitizing Substance" by the Japanese Society of Occupational Allergy, and "Skin Sensitizing Substance: Group 2"* by the Japan Society for Occupational Health. These classifications, though not specifying copper chloride, seem to include copper compounds. Copper chloride, which is a copper compound, should thus cause skin sensitization. * There is a provision to the effect that "the category refers to the substance concerned and its compounds, but does not identify all substances causing respiratory/skin sensitization.
5 Germ cell mutagenicity	Classification not possible	—	—	—	Based on the absence of data on multi-generation mutagenicity tests, germ/somatic cell mutagenicity tests in vivo and germ/somatic cell genotoxicity tests in vivo, and no strong positive data on mutagenicity tests in vitro (with some negative results), described in EHC 200 (1998) and ATSDR (2004).
6 Carcinogenicity	Classification not possible	—	—	—	No data available As for the health hazards, refer to "ID850, Copper, CAS: 7440-50-8."
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	No data on female reproductive toxicity were identified. However, the study results reported in EHC 200 (1998) suggest adverse effects on sperm production in males, though no information is provided for general toxicity. As for the health hazards, refer to "ID850, Copper, CAS: 7440-50-8."

8	Specific target organs/systemic toxicity following single exposure	Classification not possible	—	—	—	No data available The acute toxicity of copper compounds manifest as "vomiting, lethargy, acute hemolytic anemia, kidneys/liver damage, neurotoxicity, elevated blood pressure/respiratory rate, coma and death" (EHC 200 (1998)).
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	—	—	—	No data available The chronic toxicity of copper compounds manifest as "retching, abdominal pain, vomiting, abdominal pain, vomiting and diarrhea" (EHC 200 (1998)).
10	Aspiration hazard	Classification not possible	—	—	—	No data available

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Category 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 96 hours LC50=0.001mg/L of the crustacea (Marsupenaeus Japonicus) (ECETOC TR91, 2003).
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Since acute toxicity was Category 1 and it was a metallic compound, and since an underwater action and bio-accumulation were unknown, it was classified into Category 1.