

GHS Classification

ID252

Cadmium sulphide

CAS 1306-23-6

Date Classified: May 24, 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	Classification not possible	-	-	-	Classification not possible due to lack of data, though classified as "flammable" by ICSC (1999).
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	Classification not possible	-	-	-	No data available
11 Self-heating substances and mixtures	Classification not possible	-	-	-	No data available
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Stable to water; insoluble (ICSC, 1999)
13 Oxidizing liquids	Not applicable	-	-	-	Classified as "solid" according to GHS definition
14 Oxidizing solids	Not applicable	-	-	-	Inorganic compounds containing no oxygen and halogen
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 4	Exclamation mark	Warning	Harmful if swallowed	From two testing data, rat LD50 (oral route) value of >5,000mg/kg (CaPSAR (1994)) and mouse LD50 (oral route) value of 1,166mg/kg (EHC 134 (1992)), mouse LD50 value, which is the fixed value, was adopted.
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 HSDB (2005) of the human health effects: direct contact (as solution) may produce erythema and pain. The substance is thus considered "irritating" to the skin, although 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 description in HSDB (2005) of the human health effects: Painful conjunctivitis, photophobia, lacrimation, & corneal opacity. The substance is thus considered "irritating" to the eyes, although should be placed in Category 2A from the viewpoint of safety, if further subclassification is needed.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Classification not possible	(Respiratory sensitization) - (Skin sensitization) -	(Respiratory sensitization) - (Skin sensitization)	(Respiratory sensitization) - (Skin sensitization) -	Respiratory sensitization: No data available Skin sensitization: No data available
5 Germ cell mutagenicity	Classification not possible	-	-	-	Based on the absence of data on multi-generation mutagenicity tests, germ cell/somatic cell mutagenicity tests in vivo and germ cell/somatic cell genotoxicity tests in vivo, no strong positive data on mutagenicity tests in vitro, described in IARC 58 (1993). As for health hazards, refer to "ID254, Cadmium Chloride, CAS: 10108-64-2."
6 Carcinogenicity	Category 1A	Health hazard	Danger	May cause cancer	Due to the fact that the substance is classified as Category K (as cadmium and cadmium compounds) by NTP (2005), Group 1 (as cadmium and cadmium compounds) by IARC (1993) and Category 1 (as cadmium and cadmium compounds) by the Japan Society for Occupational Health.
7 Toxic to reproduction	Classification not possible	-	-	-	No data available
8 Specific target organs/systemic toxicity following single exposure	Category 2 (testes)	Health hazard	Warning	May cause damage to organs (testes)	Based on the evidence from animal studies including "an edematous testis associated with microvascular congestion" (HSDB (1999)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2. And based on the human evidence including "acute toxicity following inhalation (chemical pneumonia, pulmonary edema) and ingestion (acute/severe nausea, vomiting, gastralgia)" (EHC 134 (1992)) (cadmium compounds).

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (kidneys, respiratory organs)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (kidneys, respiratory organs)	Based on the human evidence including "a significant decrease in the urinary beta2-microglobulin levels of workers due to improvements in the working environment" (EHC 134 (1992)), and the evidence from animal studies including "formation of dose-dependent hyperplastic lesions in the respiratory tract" (CEPA (1994)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1. The chronic toxicity of cadmium compounds includes "renal failure, pulmonary emphysema" (EHC 134 (1992)), "hypercalcinuria, a decrease in blood phosphate levels, nephrolithiasis, osteoporosis, osteomalacia" (CaPSAR (1994)).
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 48 hours LC50=11microg/L of the crustacea (Daphnia magna) (AQUIRE, 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.