

GHS Classification

ID253

Cadmium nitrate, tetrahydrate

CAS 10022-68-1

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	Classification not possible	-	-	-	Classification not possible due to lack of data, though containing unsaturated bonds and a distorted ring structure.
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	-	-	-	No data available
8 Self-reactive substances and mixtures	Classification not possible	-	-	-	Classification not possible due to lack of data, though containing unsaturated bonds and a distorted ring structure.
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 (water solubility: 156g (Anhydride Equivalent)/100g (25degC), Lide (84th, 2003))
13 Oxidizing liquids	Not applicable	-	-	-	Classified as "solid" according to GHS definition
14 Oxidizing solids	Classification not possible	-	-	-	Classification not possible due to the absence of data, though being inorganic compounds containing oxygen. Cadmium nitrate tetrahydrate is not listed in the UN Recommendations on the Transport of Dangerous Goods, while inorganic nitrates (solid) (excluding those with specific product names) are classified into Division 5.1 (Oxidative Solid, UN#1477).
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) of 300mg/kg (RTECS (2004)).
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 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	Based on the description in the report on rabbit skin irritation tests (24-hour application) (RTECS (2004)): The substance causes severe skin irritation, though it is unknown whether they are reversible or not. The substance should be placed in Category 1A from the viewpoint of safety, if further subclassification is needed.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	In accordance with the technical guideline, given the fact that the substance is classified into Category 1 of skin corrosion/irritation.
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	-	-	-	Insufficient data available 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	Classification not possible	-	-	-	No data available 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	Classification not possible	-	-	-	No data available 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
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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=0.06mg/L of the fish (Fathead Minnows) (CERI Hazard Data (1997) and others.).
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.