

GHS Classification

ID265

Zinc chromate

CAS 13530-65-9

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	Not classified	-	-	-	Non-flammable (ICSC, 2002)
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 (ICSC, 2002)
11 Self-heating substances and mixtures	Not classified	-	-	-	Non-combustible (ICSC, 2002)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Stable to water; insoluble, ICSC (2002)
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
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)	Classification not possible	-	-	-	No data available
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
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Classification not possible	-	-	-	Insufficient data available Based on the description in ACGIH (7th, 2001), ATSDR (2000), CERH Hazard Data 97-18 (1998), EHC 61 (1988) and EU-RAR No.53 (2005); Substances including zinc chromate may cause chromium ulcers and skin ulcers (chromium holes) in humans.
3 Serious eye damage / eye irritation	Classification not possible	-	-	-	Insufficient data available Based on the description in EU-RAR No.53 (2005) of the effects on human health: Accidental splashing of highly water-soluble Cr(VI) compounds in solution into the eye has resulted in damage to the human eye; A number of case reports indicate corneal/conjunctival inflammation and severe symptoms such as corneal erosion and ulceration, with the intensity of the symptoms increasing at lower pH and higher temperatures; Accidental exposure causes corneal edema and opacity; Single and repeated exposure causes severe, persistent damage to the eye and skin associated with the formation of ulcers.
4 Respiratory/skin sensitization	Respiratory sensitization: Category 1 Skin sensitization: Category 1	(Respiratory sensitization) Health hazard (Skin sensitization) Exclamation mark	(Respiratory sensitization) Danger (Skin sensitization) Warning	(Respiratory sensitization) May cause allergic or asthmatic symptoms or breathing difficulties if inhaled (Skin sensitization) May cause allergic skin reaction	Respiratory sensitization: chromium is classified into "Respiratory Sensitizing Substance" by the ad hoc committee of the Japanese Society of Occupational Allergy, and "Respiratory Sensitizing Substance: Group 2"* by the Japan Society for Occupational Health. These classifications, though not specifying potassium dichromate, seem to include chromium compounds. Potassium dichromate, which is a chromium compound, should thus cause respiratory sensitization. Skin sensitization: based on the description of human health effects of occupational exposure provided by DFGOT vol.15 (2001): "contact dermatitis (skin sensitization: positive)" have been observed in workers who have handled zinc chromate, suggesting that the substance may cause skin sensitization. Chromium is classified into "Skin Sensitizing Substance" by the ad hoc committee of the Japanese Society of Occupational Allergy, and "Skin Sensitizing Substance: Group 1"* by the Japan Society for Occupational Health. These classifications, though not specifying potassium dichromate, seem to include chromium compounds. Potassium dichromate, which is a chromium 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" Based on the absence of data on in vivo mutagenicity/genotoxicity tests, and the absence of strong positive data on mutagenicity tests in vitro, described in IARC 49 (1990). As for the germ cell mutagenicity of chromium (VI), refer to potassium dichromate (CAS: 7778-50-9).
5 Germ cell mutagenicity	Classification not possible	-	-	-	

6	Carcinogenicity	Category 1A	Health hazard	Danger	May cause cancer	Due to the fact that the substance is classified as Category K (as Chromium hexavalent (VI) compounds) by NTP (2005), A1 by ACGIH (2001), Group 1 (as Chromium (VI)) by IARC (1990), Category 1 (as Chromium hexavalent (VI) compounds) by the Japan Society for Occupational Health.
7	Toxic to reproduction	Classification not possible	-	-	-	No data available As for the reproductive toxicity of chromium (VI), refer to potassium dichromate (CAS: 7778-50-9).
8	Specific target organs/systemic toxicity following single exposure	Classification not possible	-	-	-	No data available The acute toxicity of hexavalent chromium compounds manifests as "cough, yellow-green phlegm, dyspnea, pulmonary congestion, vomiting (yellow-green mucus), gastralgia, diarrhea, nausea, vomiting, hepatic damage, renal damage" (CERI Hazard Data 97-18 (1998)). Refer to the GHS classification result of potassium dichromate (ID 0262, CAS 7778-50-09).
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	-	-	-	No data available The chronic toxicity of hexavalent chromium compounds manifests as "nasal mucosa, inflammation and ulcers in the pharynx and larynx, nasal septum perforation" (CERI Hazard Data 97-18 (1998)). Refer to the GHS classification result of potassium dichromate (ID 0262, CAS 7778-50-09).
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)	Classification not possible	-	-	-	No data available
11 Hazardous to the aquatic environment (chronic)	Classification not possible	-	-	-	No data available