

GHS Classification

ID21

Lead chromate

CAS 7758-97-6

Date Classified: Mar. 23, 2006 (Environmental Hazards: Feb. 10, 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 atom 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,2004)
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Containing no atom 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,2004)
11 Self-heating substances and mixtures	Not classified	—	—	—	Non-combustible (ICSC,2004)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	—	—	—	Stable to water (water solubility: 5.8microg/100mL(25degC), ICSC (2004))
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	—	—	—	Insufficient data available [Note] The following description is found in ACGIH (7th, 2001): "The health hazard presented by PbCrO4, in comparison with that from other lead and chromium compounds, has long been a matter of dispute. Chromate salts are, in general, corrosive as a result of their oxidizing properties. Some authorities held that it presented little toxic hazard because of its extreme insolubility. Others considered it to be a hazard from both its lead and chromate content (see current TLV Documentations for Lead and Chromium compounds)."
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	Classification not possible	—	—	—	Cannot be classified due to the lack of data, although the substance may cause irreversible skin irritation of an unknown degree, based on the following descriptions on human health effects of hexavalent chromium and chromium compounds: "Necrosis and sloughing of the skin occurred in individuals at the site of application of a salve containing potassium chromate" (ATSDR, 2000) and "ulceration is likely to occur among workers who have contact with high concentrations of chromic acid, sodium or potassium dichromate or chromate, or ammonium dichromate. It does not result from contact with trivalent chromium compounds" (EHC 61, 1988).
3 Serious eye damage / eye irritation	Classification not possible	—	—	—	Cannot be classified due to the lack of data, although the substance may cause irreversible or reversible effect of an unknown degree, based on the following description of human health effects of hexavalent chromium and chromium compounds provided by EU-RAR No.53 (2005): "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 have detailed both inflammation of the cornea and conjunctivae and in more severe cases, corneal erosion and ulceration. The severity of response is increased by low pH or high temperature. Accidental eye contact with the corneal edema and opacity" and "severe and persistent eye and skin effects, including ulcers, have been observed in humans following single or repeated exposures."
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: cannot be classified due to the following reasons: the Task Force of the Japanese Society of Occupational Allergy includes chromium in its list, and the Japan Society for Occupational Health classifies chromium as "Category 2"; meanwhile, although these classifications refer to chromium or its compounds, they do not specify all of the substances relevant to sensitization, and it is unclear whether the present substance is identified as a sensitization. Moreover, CaPSAR (1994) contains a description of human health effects that chromium caused sensitization of an unknown degree, but it is unclear whether this also applies to the present substance. Skin sensitization: cannot be classified due to the following reasons: the Task Force of the Japanese Society of Occupational Allergy includes chromium in its list, and the Japan Society for Occupational Health classifies chromium as "Category 2"; meanwhile, although these classifications refer to chromium or its compounds, they do not specify all of the substances relevant to sensitization, and it is unclear whether the present substance is identified as a sensitization. Moreover, CaPSAR (1994), EHC 61 (1988), ACGIH (7th, 2001), EU-RAR No.53 (2005), DFGOT vol.15 (2001), ECETOC TR45 (1994), PATTY (4th, 2000) and ATSDR (2000) contain descriptions on chromium giving positive results in patch tests, but it is unclear whether this also applies to the present substance.
5 Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects	Based on the absence and presence of positive data on heritable mutagenicity tests and in vivo mutagenicity tests (micronucleus tests), respectively, described in RTECS (2005), although the type of cells used in the latter tests are not specified (i.e. germ or somatic cells). Moreover, a considerable number of mutagenicity and genotoxicity tests in vitro were conducted and positive results were obtained in almost all of them.

6	Carcinogenicity	Category 1A	Health hazard	Danger	May cause cancer	Due to the fact that the substance is classified as Category K (as hexavalent chromium (VI) compounds) by NTP (2005), Group 1 (as chromium (VI)) by IARC (1990) and Category 1 (as chromium (VI) compounds) by the Japan Society for Occupational Health.
7	Toxic to reproduction	Category 2	Health hazard	Warning	May damage fertility or the unborn child	Based on the evidence of reproductive toxicity of lead, inorganic lead compounds and lead chromate in ACGIH-TLV (2004) and the evidence of potential reproductive and developmental toxicity of lead chromate to humans in ICSC (2002), although no data is available for the present substance.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (hematopoietic and hematologic systems, kidneys, nervous system)	Health hazard	Danger	Causes damage to organs (hematopoietic system, blood systems, kidneys, nervous systems)	Based on the human evidence including "anorexia, vomiting, discomfort, convulsion, irreversible brain damage" (HSDB (2002) and the evidence of "effects on hematopoietic function, hemoglobin synthesis inhibition, anemia caused by shortened survival of red blood cells, proximal renal tubular damage showing Fanconi's syndrome represented by proteinuria, hematuria, urinary cast, glycosuria and aminoaciduria, effects on the central and peripheral nervous systems" observed as acute toxicity of inorganic lead (CERI Hazard Data 2001-9 (2002).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (hematopoietic and hematologic systems, kidneys, nervous system)	Health hazard	Danger	Causes damage to organs (hematopoietic system, blood systems, kidneys, nervous systems) through prolonged or repeated	No data available Based on the evidence of "effects on hematopoietic function, hemoglobin synthesis inhibition, anemia caused by shortened survival of red blood cells, proximal renal tubular damage showing Fanconi's syndrome represented by proteinuria, hematuria, urinary cast, glycosuria and aminoaciduria, effects on the central and peripheral nervous systems" (CERI Hazard Data 2001-9 (2002)) as chronic toxicity of inorganic lead.
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