GHS Classification

ID263 Potassium chromate

CAS 7789-00-6

Date Classified: May 24, 2006 (Environmental Hazards: Mar. 31, 2006)

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

Physical Hazards

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, 2005)
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, 2005)
11	Self-heating substances and mixtures	Not classified	-	-	-	Non-combustible (HSDB, 2005)
12	Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Stable to water (water solubility: 65.0g/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
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:	Classification not possible	–	–	–	No data available
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 ATSDR (2000) of human health effects: "dermal necrosis and exfoliation were observed after application of a plaster containing potassium chromate," "ulceration occurs among the workers who come into contact with high concentrations of sodium chromate, potassium dichromate or potassium chromate," suggesting that potassium chromate may cause irreversible irritation of an unknown degree. Although classified as Category 1A-1C, the substance should be placed in Category 1A from the viewpoint of safety, if further subclassification is
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: 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 results of human patch tests (ATSDR (2000)) (skin sensitization: positive). 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 causing respiratory/skin sensitization.
5	Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects	Based on the absence of data on multi-generation mutagenicity tests, germ cell mutagenicity tests in vivo and germ cell genotoxicity tests in vivo, positive data on somatic cell mutagenicity tests in vivo (micronucleus tests), described in IARC 49 (1999), ATSDR (2000), EHC 61 (1988).
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), 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 (IV), 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)	Category 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 48 hours EC50=19.2microg/L(Potassium Chromate Equivalent: 71.7microg/L) of the crustacea (Daphnia magna) (HSDB, 2004).
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.