

GHS Classification

ID109

CAS 7789-06-2

Physical Hazards

Strontium chromate

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

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, 2004)
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, 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: 0.12g/100mL (15degC), 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 and classified as a powerful oxidant (ICSC (2004)).
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	Based on the rat LD50 (oral route) of 811mg/kg ATSDR (2000).
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	-	-	-	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 strontium chromate may cause chrome ulcers and skin ulcers (chrome holes) in humans.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the description in EU-RAR No.53 (2005) of the effects on human health: Exposure to highly water-soluble Cr (VI) solution causes damage to the eyes: 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 eyes and skin associated with the formation of ulcers. Strontium chromate is classified into Category 1, according to the classification of Chrome (VI) compounds into the same category.
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: chrome 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 strontium chromate, seem to include chromium compounds. Strontium chromate, which is a chromium compound, should thus cause respiratory sensitization. Skin sensitization: chrome 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 strontium chromate, seem to include chromium compounds. Strontium chromate, 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	Classification not possible	-	-	-	Insufficient data available As for the germ cell mutagenicity caused of Cr (VI), refer to potassium dichromate (CAS: 7778-50-9)
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), Category A1 (as insoluble Cr VI compounds) by ACGIH (2001), Category A (as Chromium (VI)) by EPA (1998), Group 1 (as chromium (VI)) by IARC (1990).
7 Toxic to reproduction	Classification not possible	-	-	-	No data available As for the reproductive toxicity caused of Cr (VI), refer to potassium dichromate (CAS: 7778-50-9)

8	Specific target organs/systemic toxicity following single exposure	Classification not possible	-	-	-	Based on the description in ATSDR (2004): "The only chemical form of stable strontium that is very harmful by inhalation is strontium chromate, but this is because of toxic chromium and not strontium itself." The toxicity of strontium chromate could thus be attributed to hexavalent chromium, but test data on strontium chromate are not 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	-	-	-	Based on the description in ATSDR (2004): "The only chemical form of stable strontium that is very harmful by inhalation is strontium chromate, but this is because of toxic chromium and not strontium itself." The toxicity of strontium chromate could thus be attributed to hexavalent chromium, but test data on strontium chromate are not 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