

GHS Classification

ID390

Cobalt oxide

CAS 1307-96-6

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, 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 (insoluble, 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)	Category 3	Skull and crossbones	Danger	Toxic if swallowed	Based on the rat LD50 (oral route) value of 159mg/kg (ATSDR (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	Classification not possible	—	—	—	No data available
3 Serious eye damage / eye irritation	Classification not possible	—	—	—	No data available
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: Based on epidemiological cases: cobalt blue (cobalt oxide), which is generally used as a pigment to colour porcelain, causes respiratory sensitization in humans. Moreover, cobalt is classified into "Respiratory Sensitizing Substance: Group 1" by the Japan Society for Occupational Health. This classification, though not specifying cobalt oxide (II), seems to include cobalt compounds. Skin sensitization: Cobalt is classified into "Skin Sensitizing Substance: Group 1" by the Japan Society for Occupational Health. This classification, though not specifying cobalt oxide (II), seems to include cobalt compounds. Cobalt oxide (II), which is a cobalt 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	—	—	—	No data available
6 Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer	Due to the fact that the substance is classified as A3 (as cobalt and inorganic compounds) by ACGIH (2001), Group 2B (as cobalt and cobalt compounds) by IARC (1991) and 2B (as cobalt and cobalt compounds) by the Japan Society for Occupational Health.
7 Toxic to reproduction	Classification not possible	—	—	—	No data available As for the health hazards, refer to "ID119_Cobalt_CAS: 7440-48-4."
8 Specific target organs/systemic toxicity following single exposure	Category 1 (liver) Category 2 (heart)	Health hazard	Danger Warning	Causes damage to organs (liver) May cause damage to organs (heart)	Based on the evidence from animal studies including "hyperplasia of interstitial cells of the heart, myofiber hypertrophy/degeneration, hyperemia of the liver, organic changes of hepatocytes" (ATSDR (2004)). The effects on the heart were observed at dosing levels within the guidance value ranges for Category 2, while the effects on the liver for Category 1.
9 Specific target organs/systemic toxicity following repeated exposure	Classification not possible	—	—	—	No data available

10	Aspiration hazard	Classification not possible	-	-	-	No data available
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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