

GHS Classification

ID311

CAS 17194-00-2

Barium hydroxide

Date Classified: Aug. 22, 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	Classification not possible	—	—	—	No data available
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	Classification not possible	—	—	—	No data available
11 Self-heating substances and mixtures	Classification not possible	—	—	—	No data available
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	—	—	—	Stable to water (water solubility: 4.91g/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 lack 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 4	Exclamation mark	Warning	Harmful if swallowed	Based on the rat LD50 (oral route) value of 308mg/kg (RTECS (2006)).
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	Category 1	Corrosion	Danger	Causes severe skin burns and eye damage	Based on the evidence of "severe irritation" from skin irritation tests in rats and rabbits (exposure duration unknown). Also based on the description in the report on epidemiological studies of human exposure (CERI Hazard Data 2001-56 (2002)): "soluble barium compounds cause irritation of the eye, skin, nose, throat and bronchi. In particular, aqueous solutions of barium hydroxide are strongly alkaline and severely irritate the eye and skin." Also based on the description in CICAD (2001) (exposure duration unknown): "Barium hydroxide is strongly alkaline and therefore corrosive."
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the evidence of "severe irritation" from rabbit eye irritation tests (IUCLID (2000)). Also based on the description in the report on epidemiological studies of human exposure (CERI Hazard Data 2001-56 (2002)): "soluble barium compounds cause irritation of the eye, skin, nose, throat and bronchi. In particular, aqueous solutions of barium hydroxide are strongly alkaline and severely irritate the eye and skin." Also based on the description in CICAD 33 (2001): "corrosive."
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: No data available Skin sensitization: No data available
5 Germ cell mutagenicity	Classification not possible	—	—	—	No data available
6 Carcinogenicity	Classification not possible	—	—	—	No data available
7 Toxic to reproduction	Classification not possible	—	—	—	No data available
8 Specific target organs/systemic toxicity following single exposure	Category 2 (nervous system, muscle) Category 3 (respiratory tract irritation)	Health hazard	Warning	May cause damage to organs (nervous system, muscle) (Respiratory tract irritation) May cause respiratory irritation	Based on the human evidence: "Barium hydroxide and barium oxide irritate the eye, skin, and respiratory tract" (CICAD 33 (2001)). Also based on the evidence from animal studies: "treated animals relaxed and subsequently suffered vomiting and diarrhea; exhibited smooth muscle contraction which occurs during ejaculation; paralysis and spasm in the hind limbs were observed in some rats" (IUCLID (2000)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2.
9 Specific target organs/systemic toxicity following repeated exposure	Classification not possible	—	—	—	No data available
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