

## GHS Classification

**ID484**

**CAS 7787-49-7**

### Physical Hazards

**Beryllium fluoride**

Date Classified: Aug. 22, 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 (HSDB, 2006)
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-flammable (HSDB, 2006)
11 Self-heating substances and mixtures	Not classified	—	—	—	Non-flammable (HSDB, 2006)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	—	—	—	Stable to water (highly soluble in water, 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 lack of data, though being inorganic compounds containing fluorine.
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 LD50 value of 98.1 mg BeF2/kg calculated from the testing data of rat LD50 (oral route) of 18.8 mg beryllium/kg (DFGOT Vol.21 (2005)).
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
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	—	—	—	No data available
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	Based on the human epidemiological evidence of "skin edema following exposure to dust" (ATSDR (2002)), "redness and pain" (ICSC (2000)) and "irritation" (HSDB (2006)), and the description in ICSC (2000): Short-term exposure produces "severe irritation of the skin." The substance is thus considered a severe skin irritant.
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	Based on the human epidemiological evidence of "redness, pain and blurred vision" (ICSC (2000)), "irritation" (HSDB (2006)), and the description in ICSC (2000): Short term exposure produces "severe irritation of the eye." The substance is thus considered a severe eye irritant.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Category 1	(Respiratory sensitization) — (Skin sensitization) Exclamation mark	(Respiratory sensitization) — (Skin sensitization) Warning	(Respiratory sensitization) — (Skin sensitization) May cause an allergic skin reaction	Respiratory sensitization: No data available Skin sensitization: Based on the evidence of "delayed dermal reactions" from guinea pig skin sensitization tests (ATSDR (2002)). Also based on the description in the report on sensitization tests in guinea pigs (DFGOT Vol.21 (2005)): "26 of 33 Harley guinea pigs, five of 10 Pirbright guinea pigs and eight of 11 inbred guinea pigs demonstrated positive responses." Also based on the human epidemiological evidence: "All 13 patients who had beryllium fluoride-induced dermatitis showed positive responses in patch tests."
5 Germ cell mutagenicity	Classification not possible	—	—	—	No data available As for the reproductive mutagenicity of beryllium compounds and inorganic fluorides, refer to "ID487, Beryllium Sulfate, CAS: 7787-56-6" and "ID479, Sodium Fluoride, CAS: 7681-49-4" respectively.
6 Carcinogenicity	Category 1A	Health hazard	Danger	May cause cancer	Due to the fact that the substance is classified as Category K (Beryllium (CAS 7440-41-7) and Beryllium Compounds) by NTP (2005) and Category 1 (BERYLLIUM AND BERYLLIUM COMPOUNDS) by IARC (1993).
7 Toxic to reproduction	Classification not possible	—	—	—	Insufficient data available
8 Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation)	Exclamation mark	Warning	(Respiratory tract irritation) May cause respiratory irritation	Based on the human evidence: "Beryllium fluoride severely irritates the eye, skin and respiratory tract; may induce chemical pneumonia following inhalation of dust or fume" (ICSC (J) (2000)). Refer to the GHS classification of fluoride compounds, in particular "Hydrogen Fluoride" since "the severity of the effects was more notable with beryllium fluoride than with beryllium sulfate or beryllium hydrogen phosphate, partly due to the fluoride component which may form hydrofluoric acid in the lung as beryllium fluoride dissociates" (ATSDR (2002)).

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs, kidneys, adrenal, liver)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (respiratory organs, kidneys, adrenal, liver)	Based on the human evidence: "The acute respiratory effects could be caused by inhalation of beryllium fluoride etc." (EHC 106 (1990)). Also based on the evidence from animal studies: "Histology revealed pleuritis, congestion, emphysema, consolidation, and edema of the lung; glomerular degeneration in the kidneys; marked hypoplasia and hypotrophy of the adrenal gland; hepatocyte degeneration" (ATSDR (2002)). "caused pulmonary lesions" (EHC 106 (1990)).The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.
10	Aspiration hazard	Category 2	Health hazard	Warning	May be fatal if swallowed and enters airway	"Inhalation of dust or fume may cause chemical pneumonia" (ICSC (J) (2000)). According to the technical guideline, "metal dust of beryllium fluoride may produce chemical pneumonia following inhalation exposure etc. In the ICSC card, under the heading of 'important data,' it says 'inhalation of dust/fume may cause chemical pneumonia,' and the following chemicals are listed as examples" (ICSC (J) (2000)). The present substance is assumed to be included in the list and thus classified into Category 2 for "Aspiration hazard."

### 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