

GHS Classification

ID1312

lead difluoride

CAS 7783-46-2

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	-	-	-	There are no chemical groups associated with explosive properties present in the molecules.
2 Flammable gases	Not applicable	-	-	-	Solid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Solid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Solid (GHS definition)
6 Flammable liquids	Not applicable	-	-	-	Solid (GHS definition)
7 Flammable solids	Not classified	-	-	-	Non-combustible (BGIA, GESTIS-database on hazardous substances, Accessed in 2006)
8 Self-reactive substances and mixtures	Not applicable	-	-	-	There are no chemical groups associated with explosive or self-reactive properties present in the molecule.
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Not classified	-	-	-	Non-combustible (BGIA, GESTIS-database on hazardous substances, Accessed in 2006)
11 Self-heating substances and mixtures	Not classified	-	-	-	Non-combustible (GESTIS-database on hazardous substances, accessed in 2006)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Stable to water (the water solubility is obtained)
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Classification not possible	-	-	-	No data available
15 Organic peroxides	Not applicable	-	-	-	Inorganic compound
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 5	-	Warning	May be harmful if swallowed	Category 5 based on SPECIES: Rat; ENDPOINT: LD50; VALUE: 3031mg/kg; REFERENCE SOURCE: HSDB (2003) RTECS (2004)
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	Since there is the description that this product stimulates human skin (HSDB, 2003;SITTIG, 2002), it was thought that it had mild stimulant and it was set to category 3.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	With this product, from the description (HSDB, 2003;SITTIG, 2002) that the human eye is stimulated, and by ACGIH-TLV (2005), there was eye irritation in fluoride. So it is set as Category 2A-2B. In addition, from these information, detailed categorization is difficult.
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)-	No data available
5 Germ cell mutagenicity	Classification not possible	-	-	-	No data. In addition, in ATSDR (draft, 2005), there is the description that lead induces chromosome aberration to humans, and the inorganic lead compound is classified into the germ cell mutagenicities 3A (equivalent to GHS Category 1B-2) according to MAK/BAT (2005).

6	Carcinogenicity	Category 1B	Health hazard	Danger	May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	There is no data of this product. But as a lead compound, it is equivalent to Category 1B (inorganic lead compounds, Group 2A) in IARC87 (2004), equivalent to Category 1B-2 (Reasonably anticipated to be human carcinogens) in NTPRoC (11th, 2005), and equivalent to Category 2 (respectively B-2, A3, 2B) in IRIS (1993), ACGIH-TLV (2005), and Occupational Health Society advice (2005). Therefore, it was set as Category 1B according to Group 2A of IARC87 (2004).
7	Toxic to reproduction	Category 1A	Health hazard	Danger	May damage fertility or the unborn child	Based on the result that increase in testicular toxicity and fetus lethality were observed by administering this substance to male rats (RTECS, 2004), and the statement in ACGIH-TLV (2004) and ATSDR (draft, 2005) of Priority 1 document, etc. that lead (inorganic lead compounds) indicates reproductive toxicity in humans. So it was set as Category 1A.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system, blood system, kidneys); Category 3 (respiratory tract irritation)	Health hazard	Danger	Causes damage to organs (central nervous system, blood system, kidneys); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract)	Since there is description in CERH Hazard Data 2001-9 (2001) of Priority 1 document "in acute effects and chronic effects, almost the same symptoms are observed" as human impact of inorganic lead compound, and in ACGIH-TLV (2005), inorganic lead compounds effect on the central nervous systems, blood, and kidney, so it was considered as Category 1 (a central nervous system, blood, kidney). Moreover, in ACGIH-TLV (2005), it is supposed that fluoride has respiratory irritant. Since there was the same description also in SITTING (2002) and HSFS (1999), it was considered as Category 3 (respiratory irritant).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (bone, central nervous system, blood, kidneys)	Health hazard	Danger	Causes damage to organs (bone, central nervous system, blood, kidneys) through prolonged or repeated exposure	Although there is no data of this product, since fluoride had the influence on a bone (fluorosis), and since inorganic lead compounds had the effects on central nervous systems, blood, and renal (ACGIH-TLV (2005) of Priority 1 document), it was classified into Category 1 (a bone, a central nervous system, blood, kidney).
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.