

GHS Classification

ID1201

manganese borofluoride hexahydrate

CAS 18972-56-0

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	-	-	-	UNRTDG is classified into 6.1 and III according to the UNRTDG No. (2853). Since 4.1 was not assigned, it was classified as out of Category.
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	-	-	-	Not classified because of UNRTDG No. 2853, Class: 6.1, III (not Class: 4.2)
11 Self-heating substances and mixtures	Classification not possible	-	-	-	Test methods applicable to solid (melting point <= 140degC) substances are not available.
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Stable to water (soluble in water)
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Not classified	-	-	-	UNRTDG No. 2853, Class: 6.1; PG III (Not 5.1).
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 3	Skull and crossbones	Danger	Toxic if swallowed	Although there is no data with rats, the substance was classified as Category 3 based on the LD50 value: 200mg /kg (RTECS, 1997) in the oral administration study using guinea pigs (rodents).
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	Classification not possible	-	-	-	There is description that the this product may stimulate the human skin (SITTIG, 2002;HSFS, 2001). But it cannot be classified since there is no supporting data and data is insufficient.
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Due to the descriptions that this product irritates to the human eye (SITTIG, 2002;HSFS, 2001), and that fluoride irritates to the eye in ACGIH-TLV (2005). So this product is considered to be mildly irritant to the eye. Therefore, it was classified Category 2B.
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 available
6 Carcinogenicity	Classification not possible	-	-	-	Although fluoride was classified into A4 (corresponding to outer Category) in ACGIH-TLV (2005), due to insufficient data, it cannot be classified.
7 Toxic to reproduction	Classification not possible	-	-	-	Although there is no developmental toxicity in fluoride according to MAK/BAT (2005), it cannot be classified since data is insufficient.

8	Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation)	Exclamation mark	Warning	may cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation)	In ACGIH-TLV (2005) of Priority 1 document, it is supposed that fluoride has respiratory irritant. It was considered as Category 3 (respiratory irritant).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (bone)	Health hazard	Danger	Causes damage to organs (bone) through prolonged or repeated	Since there is a description of the influence (fluorosis) on a bone as fluoride (ACGIH-TLV (2005) of Priority 1 document), it was classified into Category 1 (bone).
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.