GHS Classification

ID1179 Chlorosulfonic acid

CAS 7790-94-5 Date Classified: Jul. 24, 2006 (Environmental Hazards: Jan. 25, 2007)

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	–	–	–	Liquid (GHS definition)
3	Flammable aerosols	Not applicable	–	–	–	Not aerosol products
4	Oxidizing gases	Not applicable	–	–	–	Liquid (GHS definition)
5	Gases under pressure	Not applicable	–	–	–	Liquid (GHS definition)
6	Flammable liquids	Not classified	–	–	–	Nonflammable (ICSC (J), 2001). However, this product is highly reactive, and since it may react with other substances to cause fire and explosions, caution is needed.
7	Flammable solids	Not applicable	–	–	–	Liquid (GHS definition)
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 classified	–	–	–	Nonflammable (ICSC (J), 2001). However, since this product is highly reactive, and it may react with other substances and cause fire and explosions, it needs attention.
10	Pyrophoric solids	Not applicable	–	–	–	Liquid (GHS definition)
11	Self-heating substances and mixtures	Not classified	–	–	–	Nonflammable (ICSC (J) 2001). However, the this product of reactive is high, and since it may react with other substances and fire and explosions may be caused, it need to be careful.
12	Substances and mixtures, which in contact with water, emit flammable gases	Not classified	–	–	–	Although it reacted violently with water and hydrochloric acids and sulfates were produced, all are nonflammability and were carried out the outside of Category.
13	Oxidizing liquids	Not classified	–	–	–	Not classified because of UNRTDG No. 1754, Class: 8, PG I (not Class: 5.1), though it is a strong oxidizing agent (ICSC(J), 2001; NFPA, 13th, 2002)
14	Oxidizing solids	Not applicable	–	–	–	Liquid (GHS definition)
15	Organic peroxides	Not applicable	–	–	–	Inorganic compound
16	Corrosive to metals	Category 1	Corrosion	Warning	May be corrosive to metals	UNRTDG is classified into 8 and I according to the UNRTDG No. (1754). Since NFPA (13th, 2002) had the description "perform transportation with a glass bottles", it was thought that corrosion behavior was strong and it was set as Category 1.

Health Hazards

Hazard class		Classification	symbol	signal word	hazard statement	Rational for the classification
1	Acute toxicity (oral)	Category 2	Skull and [illegible]	Danger	Fatal if swallowed	Category 2 based on SPECIES: Rat; ENDPOINT: LD50; VALUE: 50 mg/kg; REFERENCE SOURCE: RTECS(2000)
1	Acute toxicity (dermal)	Classification not possible	–	–	–	No data available
1	Acute toxicity (inhalation: gas)	Not applicable	–	–	–	Liquid (GHS definition)
1	Acute toxicity (inhalation: vapour)	Category 1	Skull and crossbones	Danger	Fatal if inhaled	It was classified as Category 1 from the higher toxic value (LC50 (4h) = 0.0385mg/L).(This value is from rat LC50 (4h) = 4.779mg/L (= 1003ppm, RTECS (2000)), 0.0385mg/L (= 8ppm, IUCLID (2000), HSDB (2003))). In addition, the saturated concentration of this product is 1317ppm, and it is presumed that each inhalation experiments was conducted in the state of steam.
1	Acute toxicity (inhalation: dust, mist)	Classification not possible	–	–	–	No data available
2	Skin corrosion / irritation	Category 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	There is the description that there is caustic to human skin (HSDB and (2003), ICSC (J), (2001), SITTIG (4th, 2002)), and it was classified into "C;R35" in the European risk phrases. So it was set as category 1A-1C. [view] When further categorizing needs to be performed, it is desirable to be set as category 1A from a viewpoint of [illegible]
3	Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	In addition to being skin corrosive substances (Category 1), strong corrosive to the human eye, the irreversible damage to eye (HSDB (2003), ICSC (J), (2001), SITTIG (4th, 2002)), it was classified into Category 1.
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	–	–	–	No data available

7	Toxic to reproduction	Classification not possible	–	–	–	No data available
8	Specific target organs/systemic toxicity following single exposure	Category 2 (inhalation:respiratory)	Health hazard	Warning	May cause damage to organs (inhalation:respiratory)	It was considered as Category 2 (inhalation: respiratory systems).) based on the description that in Priority 2, pulmonary edemas is caused for humans by inhalation (ICSC (J), (2001)), moreover, the irritation/caustic to an airway are observed (SITTIG (4th, 2002), ICSC(J) (2001)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (respiratory organs)	Health hazard	Warning	May cause damage to organs (respiratory organs) through prolonged or repeated exposure	Because there were descriptions in Priority 2 that repeated exposure risks the human lungs (ICSC (J), (2001)) and starts bronchitis (SITTIG (4th, 2002)), it was classified into Category 2 (respiratory systems). In addition, it is supposed that teeth are affected and tooth acid corrosions are occured (ICSC (J), (2001)).
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)	Category 3	–	–	Harmful to aquatic life	It was classified into Category 3 from 24-hour EC50=32mg/L of Crustacea (Daphnia magna) (AQUIRE, 2003).
11	Hazardous to the aquatic environment (chronic)	Not classified	–	–	–	Toxicity factor is considered pH decrease (it hydrolyzed and hydrochloric acid and aulfuric acid are generated), but toxic effect is eased by the buffer action in the environmental water.