GHS Classification

ID228 Propionic acid, 2-chloro-

CAS 598-78-7 Date Classified: Jun. 20, 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	-	-	-	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	-	-	-	Not classified because of its Flash point: 107degC and beyound Category 4 (60degC <f.p.<93degC)
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	-	-	-	Flash point: 500degC (NFPA (13th, 2002); etc.)
10	Pyrophoric solids	Not applicable	-	-	-	Liquid (GHS definition)
11	Self-heating substances and mixtures	Classification not possible	-	-	-	Test methods applicable to liquid substances are not available
12	Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	-	-	-	The chemical structure of the substance does not contain metals or metaloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At).
13	Oxidizing liquids	Not applicable	-	-	-	Organic compounds containing oxygen and chlorine (but not fluorine) and these elements are chemically bonded only to carbon and hydrogen (but not to other elements).
14	Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
15	Organic peroxides	Not applicable	-	-	-	Organic compounds containing no -0-0- structure
16	Corrosive to metals	Classification not possible	-	-	-	Classification not possible due ot lack of data, though it is corrosive liquids.

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	SPECIES: Rat ENDPOINT: LD50 VALUE: 800 mg/kg REFERENCE SOURCE: ACGIH (2001)
1	Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	The guinea pig LD50= 126 - 1258mg/kg (ACGIH (2001)). It was set as Category 2 based on the low value (LD50= 126mg/kg).
1	Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1	Acute toxicity (inhalation: vapour)	Category 3	Skull and crossbones	Danger	Toxic if inhaled	The saturated vapor pressure concentration of this product is 1396ppm = 6.20mg/L, and it is thought that the inhalation test was done with vapor. It was classified as Category 3 based on rat LC50 = 3.38mg/L = 760ppm (IUCLID (2000)).
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	Based on the descriptions that it is corrosive with rabbits and guinea pigs (ACGIH and (2001), IUCLID (2000)) and that a severe burn occurs on humans(HSDB (2005)), and the fact that it is classified as C:R35 in EU (EU-Annex I (2005)), it was classified as Category 1A-1C.
3	Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	This product was set as category 1 based on the description (ACGIH (2001)) that it is a corrosive of the corrosion products and it is corrosive for guinea pigs.
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Not	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	Respiratory sensitization: No data. Skin sensitization: Classified as out of category on the basis that two sensitization tests using guinea pigs resulted negative (ACGIH (2001), IUCLID (2000)).
5	Germ cell mutagenicity	Classification not possible	-	-	-	It was decided that the substance could not be classified by the technical guidelines because there are no results from in vivo tests and there are no positive results in several parameters in vitro tests.
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 (respiratory, nervous system)	Health hazard	Warning	May cause damage to organs (respiratory, nervous system)	The effects (pulmonary function decline, dyspnea, pleuritic chest pains, pulmonary edemas, bronchospasm, pneumonia, tracheobronchitis) on respiratory organs are indicated in humans (HSDB (2005)). It is indicated that the neurotoxicity by deletion of cerebellar cortex granulosa cells is developed in rat by the dosage of guidance value within the limits in Category 2 (IUCLID (2000)). It is indicated that there is the possibility of respiratory irritant to human (ACGIH (2001)). Based on these results, it was classified into Category 2 (the respiratory system, nervous system).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (testes, central nervous system)	Health hazard	Warning	May cause damage to organs (testes, central nervous system) through prolonged or repeated exposure	In oral administration in rats, a irreversible change such as testicular atrophy, necrosis of cerebellum granule cells etc. (ACGIH (2001)), and neurologic symptoms such as hypersensitivity to a stimulus (IUCLID (2000)), were seen by dose of guidance value range of Category 2. It was classified in Category 2 (a teste, a central nervous systems) based on these data.
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)	Not classified	–	–	–	It considered as the outside of Category from 96-hour LC50=100-150mg/L of fishes (Golden orfe) (IUCLID, 2000).
11	Hazardous to the aquatic environment (chronic)	Not classified	–	–	–	Since not water-insoluble (water solubility=1.00*106mg/L(PHYSPROP Database, 2005)) and acute toxicity is low.