

GHS Classification

ID565

2-Chloroethanol

CAS 107-07-3

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	Category 3	Flame	Warning	Flammable liquid and vapour	Flash point: 60degC
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	-	-	-	Not ignite spontaneously on coming into contact with air at normal temperatures
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 metalloids(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 -O-O- structure
16 Corrosive to metals	Classification not possible	-	-	-	No data 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	SPECIES: Rat ENDPOINT: LD50 VALUE: 71mg/kg REFERENCE SOURCE: ACGIH (2001), RTECS (2004)
1 Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	Dermal toxicity LD50 of a rabbit is 67mg/kg (IUCLID (2000)).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Category 1	Skull and crossbones	Danger	Fatal if inhaled	There are descriptions about LC50 = 0.3mg/L (but exposure time is unknown) (RTECS (2000)) and that death was observed with 1 hour exposure to 7.5ppm (ACGIH (2001)). So it is supposed to be Category 1.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Not classified	-	-	-	Results as both being irritating and not irritating is obtained in animal examination (IUCLID (2000)). But PATTY (5th, 2005) states that there is no skin irritation.
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	The result which is irritating is obtained in the animal studies (IUCLID (2000)). Although PATTY (5th, 2005) is setting to extremely irritating. But there is no evidence as irreversible, it is set as Category 2A.
4 Respiratory/skin sensitization	Classification not possible; Skin sensitization: Not possible	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	There is proof that there is no skin sensitization by animal studies etc. (PATTY (5th, 2005), IUCLID (2000)). About respiratory sensitization, there is no data and it cannot be classified.
5 Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	There are negative results from the in vivo (multi-generation) reciprocal translocation test in mice, mouse chromosome aberration test and dominant lethal test ((PATTY (5th, 2001)) and from the DNA damage test in rats (IUCLID (2000)), but there are positive results from in vivo chromosome aberration tests in rat bone-marrow (inhalation). There are also positive results from the in vitro (CHO) chromosome aberration test, the sister chromatid exchange test and the Ames test (PATTY (5th, 2001)). So the substance was classified as Category 2.
6 Carcinogenicity	Category 1	-	-	-	ACGIH is classified into A4 and there is also data in which carcinogenicity is not indicated in an animal examination. But there is the proof it is carcinogenic to humans in epidemiological data (PATTY (5th, 2005)). So it is set as Category 1.

7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	There is effect to embryo in animal experiment even if it is limited result (DFGOT vol. 5 (1993)), it is doubted about reproductive toxicity to human
8	Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system, blood system, kidneys, liver, respiratory); Category 3 (narcotic)	Health hazard	Danger	Cause damage to organs (central nervous system, blood system, kidneys, liver, respiratory); May cause respiratory irritation or may cause drowsiness and dizziness (narcotic)	Since the effects to the central nervous system, cardiovascular systems, renal, lung, and liver in human are observed (DFGOT vol.5 (1993)), it is classified into Category 1. Since there is the description which irritates the airway seriously (ICSC (J) (2003)), together with the effect on lung, and the target organ is the respiratory systems. Moreover, since the anaesthetic by inhalations is indicated (DFGOT vol.5 (1993)), it is also classified into Category 3 (anaesthetic).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (blood system); Category 2 (liver, kidneys)	Health hazard	Danger; Warning	Causes damage to organs (blood system) through prolonged or repeated exposure; May cause damage to organs (liver, kidneys) through prolonged or repeated exposure	Though effects on blood systems, liver, kidney were seen (RTECS (2004)), viewed from a guidance value, it is classified in Category 1 for blood system, and Category 2 for liver and 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)	Category 2	-	-	Toxic to aquatic life	It was classified into Category 2 from 72-hour ErC50=5.6mg/L of algae (Scenedesmus) (IUCLID, 2000).
11 Hazardous to the aquatic environment (chronic)	Category 2	Environment	-	Toxic to aquatic life with long lasting effects	Classified into Category 2, since acute toxicity was Category 2, and rapid degradability is unknown, though supposed less bio-accumulative (log Kow=0.03(PHYSROP Database, 2005)).