GHS Classification

ID126 1,2-Dichloroethane

CAS 107-06-2 Date Classified: Mar. 23, 2006 (Environmental Hazards: Feb. 10, 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	-	-	-	Containing no chemical groups with explosive properties
2	Flammable gases	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
3	Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4	Oxidizing gases	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
5	Gases under pressure	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
6	Flammable liquids	Category 2	Flame	Danger	Highly flammable liquid and vapour	The flash point is 13degC (c.c.) (ICSC, 1999) and the boiling point is 83.5degC, which is classified into Category 2. Classified into Class 3 and Division 6.1 (UN#1184) (UN Recommendations on the Transport of Dangerous Goods)
7	Flammable solids	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
8	Self-reactive substances and mixtures	Not applicable	-	-	-	Containing no chemical groups with explosive or self-reactive properties
9	Pyrophoric liquids	Not classified	-	-	-	Not pyrophoric when in contact with air at ordinary temperatures; the auto-ignition temperature is 413degC (ICSC, 1999)
10	Pyrophoric solids	Not applicable	-	-	-	Classified as "liquid" according to 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	-	-	-	Containing no metals or metalloids (B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At)
13	Oxidizing liquids	Not applicable	-	-	-	Organic compounds containing chlorine (but not oxygen and fluorine), with the chlorine bound to carbon and hydrogen (but not to other elements)
14	Oxidizing solids	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
15	Organic peroxides	Not applicable	-	-	-	Organic compounds containing no "-O-O-" structure
16	Corrosive to metals	Not classified	-	-	-	Classified into Class 3 and Division 6.1 (UN#1184) (UN Recommendations on the Transport of Dangerous Goods)

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	Based on the LD50 value of 695mg/kg calculated from the testing data of rat LD50 (oral route) of 680mg/kg (EHC 62, 1987), 850mg/kg (EHC 62, 1987) and 967mg/kg (SIDS, 2002).
1	Acute toxicity (dermal)	Category 5	-	Warning	May be harmful in contact with skin	Based on the testing data of rabbit LD50 (dermal route) of 4,890mg/kg (SIDS (2002)).
1	Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Due to the fact that the substance is "liquid" according to the GHS definition and inhalation of its gas is not expected.
1	Acute toxicity (inhalation: vapour)	Category 3	Skull and crossbones	Danger	Toxic if inhaled	Based on the LC50 value (4 hours) of 1,000ppm, calculated from the testing data of rat LC50 (inhalation of vapour) of 4 mg/L (6 hours) (EHC 62 (1987)), 6.6mg/L (7.25 hours) (EHC 62 (1987)), 3.29mg/L (10 hours) (SIDS (2002)), and 6.77mg/L (6 hours) (SIDS (2002)), was lower than 90% of the saturated vapor concentration (80,500ppm) under a saturated vapour pressure of 8.13kPa (20degC) (CERI Hazard Data 96-20 (1997)), the substance was considered as "vapour containing substantially no mist" and was classified based on standard values expressed in ppm.
1	Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2	Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	Based on the description in the report on rabbit skin irritation tests (CERI-NITE Hazard Assessment No.3 (2004)): "moderate irritant."
3	Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Based on the description in the report on human epidemiological studies and rabbit eye irritation tests (CERI-NITE Hazard Assessment No.3 (2004): The results of Draize tests suggest "mild irritation."
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) -	Respiratory sensitization: No data available Skin sensitization: No data available
5	Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects	Based on negative data on multi-generation mutagenicity tests (dominant lethal tests), the absence of data on germ cell mutagenicity tests in vivo, positive data on somatic cell mutagenicity tests in vivo (mouse spot tests), and the absence of data on germ cell genotoxicity tests in vivo, described in SIDS (2004), IARC 71 (1999), CERI-NITE Hazard Assessment No.3 (2004), and EHC 176 (1995), according to the technical guideline
6	Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer	Due to the fact that the substance is classified as Group 2B by IARC (1999), Category B2 by IRIS (2005), and Category R by NTP (2005).
7	Toxic to reproduction	Not classified	-	-	-	Based on the description in CERI-NITE Hazard Assessment No.3 (2004): Reproductive mouse toxicity tests, rat one-generation tests and rat and rabbit teratogenicity tests show no effects on the embryo.

8	Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system, liver, kidneys, adrenal) Category 3 (narcotic effects)	Health hazard and Exclamation mark	Danger Warning	Causes damage to organs (central nervous system, liver, kidneys, adrenal) (Narcotic effects) May cause drowsiness or dizziness	Based on the human evidence including "crouching position, confusion, staggering gait, hyperkinesias, tremor, somnolency, clouding of consciousness, coma, hemorrhagic diathesis, cyanosis, hepatic necrosis, tubulonecrosis, adrenal necrosis, circulatory system disorder" (CERI-NITE Hazard Assessment No.3 (2004)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (nervous system, liver, thyroid gland) Category 2 (kidneys)	Health hazard	Danger Warning	Causes damage to organs through prolonged or repeated exposure (nervous system, liver, thyroid gland) May cause damage to organs through prolonged or repeated exposure(kidneys)	Based on the human evidence including "neurosis, myeloradiculitis, hepatic disease, cholepathia, autonomic ataxia, bronchocele, hyperthyroidism, inertia" (CERI-NITE Hazard Assessment No.3 (2004)), and the evidence from animal studies including "reversible degeneration of the renal tubular epithelium" (CERI-NITE Hazard Assessment No.3 (2004)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2.
10	Aspiration hazard	Category 1	Health hazard	Danger	May be fatal if swallowed and enters airways	Based on the description in the report on human symptoms: "May cause pulmonary edema if inhaled and chemical pneumonia if swallowed." (MOE Risk Assessment vol. 2 (2003)), "Pulmonary congestion/edema, dyspnea and bronchitis were observed in deceased patients (due to acute ingestion), while pulmonary edema can be attributed to chemical pneumonia due to misswallowing" (ATSDR (2001)).

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 96-hour LC50=94mg/L of the fish (Bluegill) (SIDS (2004) and others.).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Although the acute toxicity was Category 3, judging from NOEC=29000microg/L during 28 days of the fish (Fathead minnows) (MOE Risk Assessment vol. 2, 2003), it was classified into Not classified.