GHS Classification

ID117 Chlorobenzene

CAS 108-90-7 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 atom 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 3	Flame	Warning	Flammable liquid and vapour	The flashing point is 27degC (ICSC, 2003) (closed cup flash test), which is classified into Category 3, or Class 3 and Container III (UN Recommendations on the Transport of Dangerous Goods, UN#1134)
7	Flammable solids	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
8	Self-reactive substances and mixtures	Not applicable	-	-	-	Containing no atom groups with explosive or self-reactive properties
9	Pyrophoric liquids	Not classified	-	-	-	Not pyrophoric when in contact with air at ordinary temperatures: the flashing point is 590degC (ICSC, 2003)
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 (UN Recommendations on the Transport of Dangerous Goods, UN#1134)

Health Hazards

Hazard class		Classification	symbol	signal word	hazard statement	Rational for the classification
1	Acute toxicity (oral)	Category 5	-	Warning	May be harmful if swallowed	Based on the testing data of rat LD50 (oral route) of 2,914mg/kg (MOE Risk Assessment Vol. 3, 2004).
1	Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
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 4	Exclamation mark	Warning	Harmful if inhaled	Based on the LC50 value of 16.5mg/L (3,526ppm), calculated from the testing data of rat LC50 (7 hour inhalation of vapour) of 13.5mg/L (EHC 167, 1995), was lower than 90% of the saturated vapor concentration (16,000 ppm) under a saturated vapour pressure of 1.6 kPa (25degC) (HSDB, 2005), 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 evidence of "moderate irritation" from rabbit skin irritation tests (CERI-NITE Hazard Assessment No.82, 2005) and human reports (CERI-NITE Hazard Assessment No.82, 2005).
3	Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes severe eye irritation	Based on the evidence of "moderate irritation" from rabbit and guinea pig eye irritation tests (ACGIH 7th, 2001) and human reports (CERI-NITE Hazard Assessment No.82, 2005).
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Classification not possible	-	-	-	Respiratory sensitization: No data available Skin sensitization: Insufficient data available, although the substance was reported negative in guinea pig maximization tests (CERI-NITE Hazard Assessment No.82, 2005).
5	Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects	Based on negative data on heritable mutagenicity tests (dominant lethal tests), positive data on somatic cell mutagenicity tests in vivo (micronucleus tests) and the absence of data on germ cell mutagenicity and genotoxicity tests in vivo, described in CERI-NITE Hazard Assessment No.82 (2005).
6	Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer	Due to the fact that the substance is classified as Category A3 by ACGIH (2001).
7	Toxic to reproduction	Not classified	-	-	-	Based on the report that no reproductive or developmental toxicity was observed at dosing levels not toxic to parent animals, described in CERI-NITE Hazard Assessment No.82 (2005).
8	Specific target organs/systemic toxicity following single exposure	Category 1 (systemic toxicity) Category 3 (narcotic effects)	Health hazard	Danger	Causes damage to organs (systemic toxicity), may cause sleepiness and dizziness	Based on the human evidence of "debility, nausea and lethargy observed as general symptoms of acute toxicity after occupational exposure" (CERI-NITE Hazard Assessment No. 82, 2005).

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (central/peripheral nervous system, blood system) Category 2 (liver, kidneys, adrenal gland)	Health hazard	Danger	Causes damage to organs (central/peripheral nervous systems, blood systems) and may cause damage to organs (liver, kidneys, adrenal gland) through prolonged or	Based on the human evidence of "numbness, cyanosis (due to respiratory center depression), hyperesthesia, muscular spasm" (ATSDR, 1990) and the evidence of "necrosis of hepatocytes, degeneration of renal cortical tubules, vacuolation of adrenal zona reticularis cells, neutropenia" (CERI-NITE Hazard Assessment No.82, 2005) from animal studies. The effects on experimental animals were observed at dosing levels within the guidance value range for Category 2 (except for the effects on the blood systems, which corresponded to Category 1).
10	Aspiration hazard	Category 2	Health hazard	Warning	May be harmful if swallowed or inhaled	Based on the description in ICSC (J) (2003): "May cause aspiration and chemical pneumonia if swallowed".

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11	Hazardous to the aquatic environment (acute)	Category 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 48 hours EC50=585.52microg/L of the crustacea (Daphnia magna) (CICAD60, 2004).
11	Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Although acute toxicity is Category 1 and bio-accumulation is low (BCF=39.6(Existing Chemical Safety Inspections Data,)), since there was no rapidly degrading (the decomposition by BOD: 5%(Existing Chemical Safety Inspections Data)), it was classified into Category 1.