

## GHS Classification

**ID136**

**1,2-Dichloropropane**

**CAS 78-87-5**

Date Classified: Apr. 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	-	-	-	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 16degC (c.c.) (ICSC, 2000) and the boiling point is 96degC, which is classified into Category 2. Classified into Class 3 and Packing Group II (UN#1279) (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 557degC (ICSC, 2000)
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#1279)

## 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 testing data of rat LD50 (oral route) of 1,900mg/kg (EHC 146 (1993)).
1 Acute toxicity (dermal)	Not classified	-	-	-	Based on the testing data of rabbit LD50 (dermal route) of 10,115mg/kg (DFGOT vol. 9 (1998)).
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)	Not classified	-	-	-	Based on the LC50 value of 35mg/L (7,600ppm), calculated from the testing data of rat LC50 (10-hour inhalation of vapour) of 14 mg/L (PATTY 5th (2001)), was lower than 90% of the saturated vapour concentration (70,000ppm) under a saturated vapour pressure of 7.1kPa (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 3	-	Warning	Causes mild skin irritation	Based on the evidence of "mild irritation" from rabbit skin irritation tests (CERI-NITE Hazard Assessment No.39 (2005)) and human reports (MOE Risk Assessment vol.2 (2003)).
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	Based on the evidence of "moderate irritation" from rabbit eye irritation tests (CERI-NITE Hazard Assessment No.39 (2005)) and human reports (MOE Risk Assessment vol.2 (2003)).
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Category 1	(Respiratory sensitization) - (Skin sensitization) Exclamation mark	(Respiratory sensitization) - (Skin sensitization) Warning	(Respiratory sensitization) - (Skin sensitization) May cause allergic skin reaction	Respiratory sensitization: No data available Skin sensitization: Based on the description in the report on two human symptoms (EHC 146 (1993)): The substance causes skin sensitization.
5 Germ cell mutagenicity	Not classified	-	-	-	Based on negative data on multi-generation mutagenicity tests (rat dominant lethal tests) and the absence of data on germ/somatic cell mutagenicity tests in vivo, described in CERI-NITE Hazard Assessment No.39 (2004).
6 Carcinogenicity	Not classified	-	-	-	Due to the fact that the substance is classified as Category A4 by ACGIH (2001) and Group 3 by IARC (1999).
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the description in ATSDR (1989): Degeneration is observed in the testes, including impaired spermatogenic ability and an increase in abnormal sperms.

8	Specific target organs/systemic toxicity following single exposure	Category 1 (liver, blood, kidneys). Category 3 (respiratory tract irritation, narcotic effects)	Health hazard and Exclamation mark	Danger Warning	Causes damage to organs (liver, blood, kidneys) (Respiratory tract irritation) May cause respiratory irritation (Narcotic effects) May cause drowsiness or dizziness	Based on the human evidence including "hepatotoxicity associated with portal hypertension, hepatic necrosis, hemolytic anemia, thrombosis" (CERI Hazard Data 98-16 (1999)), "acute effects on the kidneys, tubulonecrosis" (EHC 146 (1993)) "a sense of fatigue due probably to central nervous system depression" (ATSDR (1989)), and the evidence from animal studies including "respiratory irritation" (ACGIH (7th, 2001)), "dyspnea, a decrease in mobility, coma" (CERI-NITE Hazard Assessment No.39 (2004)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (kidneys, liver, blood system) Category 2 (respiratory organs)	Health hazard	Danger Warning	Causes damage to organs through prolonged or repeated exposure (kidneys, liver, blood system) May cause damage to organs through prolonged or repeated exposure (respiratory)	Based on the human evidence including "severe nephropathy (an increase in creatinine and urea nitrogen concentrations), acute hepatopathy (an increase in AST, ALT and bilirubin levels), hemolytic anemia, thrombosis, tubulonecrosis" (CERI Hazard Data 98-16 (1999)), and the evidence from animal studies including "olfactory epithelial degeneration" (CERI-NITE Hazard Assessment No.39 (2004)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2.
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 48 hours EC50=13600microg/L of the crustacea (Ceriodaphnia) (MOE Risk Assessment vol. 2 (2003) and others.).
11 Hazardous to the aquatic environment (chronic)	Category 3	-	-	Harmful to aquatic life with long lasting effects	Although acute toxicity was Category 3 and the potential was low (BCF=6.9(Existing Chemical Safety Inspections Data)), since there was no rapidly degrading (the decomposition by BOD: 0%(Existing Chemical Safety Inspections Data)), it was classified into Category 3.