

GHS Classification

ID1231

dichloroacetic acid

CAS 79-43-6

Date Classified: Feb. 20, 2007 (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	-	-	-	Non-combustible (ICSC(J), 2000).
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 combustible (ICSC (J), 2000)
10 Pyrophoric solids	Not applicable	-	-	-	Liquid (GHS definition)
11 Self-heating substances and mixtures	Not classified	-	-	-	Not combustible (ICSC(J) (2000))
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	Category 1	Corrosion	Warning	May be corrosive to metals	UNRTDG is classified into 8 and II according to the UNRTDG No. (1764). Since ICSC (J) (2000) had the description "it is strong acid and many metals is corroded", it was thought that there was corrosion behavior and it was set as Category 1.

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 the rat oral LD50 value : 2820-4480mg/kg (ACGIH (7th, 2005)), it was classified as Category 5.
1 Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	Considering rabbit dermal LD50 = 510mg/kg (ACGIH (7th, 2005), RTECS (2004)), it was set as Category 3.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	No data available
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	Since "Severe (severe)" reaction was seen in Standard Draize Test to a rabbit (ACGIH(7th, 2005); RTECS (2004)), and there was description which indicates caustic to human's skin (ICSC (J) (2000)) and produces the severe stimulativeness and the severe burn (SITTIG(4th, 2002); HSFS (1999)), it was set as category 1A-1C. In addition, further categorizing from this data is difficult.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	There is the description that severe irritation is indicated for the eye of rabbit (ACGIH (7th, 2005)), caustic is indicated to the human eye (ICSC(J)(2000), and SITTIG(4th, 2002)), an irreversible obstacle is produced in the human eye (SITTIG(4th, 2005), and HSFS(1999)). Moreover, it was classified into Category 1 to the skin. So it was set to Category 1.
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)-	No data available

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 is the positive result at the in vivo small core test using a mouse erythrocytes of peripheral blood (IARC84(2004);IRIS (2003)), and gene mutation test of the liver using a transgenic mice (IARC84 (2004)). So it is classified into Category 2. In addition, although there is the inconsistent report that it is positive/ negative in the in vitro mutagenicity test (an Ames test, a chromosome aberration test) and in in vivo small core test, this material is considered to has the genotoxicity in in vitro(IARC84 (2004)).
6	Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	This product is classified inot "Group 2B (carcinogenic may be indicated to humans)" by IARC (IARC84 (2004)), and "A3 (although it is the substance with which carcinogenic was ascertained to the animal, the relevancy to human is categoried into unknown"(ACGIH (7th, 2005)). Therefore, it was set to category 2 according to the technical indicator.
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the undorn child	The malformations of the heart is seen in the fetus by oral administration to pregnant rats in the dose which indicates maternal toxicity, and moreover, the malformation of a sperm, testicular atrophy, etc. are seen administration to male rats. (All are ACGIH (7th, 2005), IARC84 (2004), HSDB (2003), Catalog of teratogenic agents (2004)). And it was considered as the testicular disorders (ACGIH (7th, 2005)), it was set as Category 2.
8	Specific target organs/systemic toxicity following single exposure	Category 2 (inhalation:lung)	Health hazard	Warning	May cause damage to organs (inhalation:lung)	Since there was description that inhalation of vapor indicates caustic to the human respiratory tract, and pulmonary edemas may be caused (ICSC (J) (2000), SITTIG (4th, 2002), HSFS (1999)) in the document of Priority 2 , it was considered as Category 2 (inhalation: lungs).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (nervous system); Category 2 (liver, kidneys, testes)	Health hazard	Danger	Causes damage to organs (nervous system) through prolonged or repeated exposure; May cause damage to organs (liver, kidneys, testes) through prolonged or repeated exposure	Since there is description that influence was observed in the nervous system (stillness action, and peripheral neuropathy) as a result of dose to the humans of this product (IARC84(2004), and IRIS(2003), the document of Priority 1) and that enlarged liver/hepatomegaly, etc., renal syndrome, testicular atrophy etc. were observed in the administration to a mouse and a rat with the given dose classified into Category 2 according to a guidance value (ACGIH(7th, 2005), IARC84(2004), IRIS(2003), and HSDB(2003)), it was classified into Category 1 (nervous systems) and Category 2 (liver, the kidney, testes).
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 carried out the outside of Category from 24-hour EC50=106mg/L of Crustacea (Daphnia magna) (AQUIRE, 2003).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since not water-insoluble (water solubility=1000000mg/L(PHYSROP Database, 2005)) and acute toxicity is low.