

GHS Classification

ID860

1,2,4-Trichlorobenzene

CAS 120-82-1

Date Classified: May 24, 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	Not classified	-	-	-	Flash point: >93degC
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	-	-	-	Flash point: >500degC (Ullmanns (E), 5th, 1995, A6: p328-333)
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 classified	-	-	-	Organic compounds containing chlorine (but not oxygen and fluorine) 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	-	-	-	Containing no -O-O- structure
16 Corrosive to metals	Not classified	-	-	-	UNRTDG Class: 6.1

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	Calculated based on the following data: Rat LD50 value: 756mg/kg (DFGOT vol.3, 1992, ACGIH 7th, 2001, EHC 128, 1991, EU-RAR, 2003), 880mg/kg (DFGOT vol.3, 1992, ACGIH 7th, 2001), 930mg/kg (DFGOT vol.3, 1992, EU-RAR, 2003), and 1019mg/kg (DFGOT vol.3, 1992, ACGIH 7th, 2001, EU-RAR, 2003). Since the calculated values was 806.2mg/kg, it was classified to category 4.
1 Acute toxicity (dermal)	Not classified	-	-	-	Based on rat LD50 values: 6139mg/kg (DFGOT vol. 3, 1992, and ACGIH 7 th2001, EHC128, 1991, EU-RAR, 2003), 11415mg/kg (DFGOT vol. 3, 1992, and ACGIH 7 th, 2001, EU-RAR, 2003), and approximately 5000mg/kg (EU-RAR, 2003) and >5000mg/kg (EU-RAR, 2003), it was considered as the outside of Category.
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	-	-	-	There was description that death was not acknowledged by 418ppm (equivalent 3.1mg/L) 4-hour exposure in rats (EU-RAR (2003)). But there is no other data, and the category could not be specified. Therefore, it cannot be classified since data is insufficient.
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	It was set as Category 3 from description that very slight stimulativeness was acknowledged in the animal experiments according to the OECD Guidelines (EU-RAR (2003)).
3 Serious eye damage / eye irritation	Not classified	-	-	-	There is the description that in the animal experiments complied with the OECD Guidelines of EU-RAR (2003), effect was not acknowledged in corneal and iris, and the description that in the test applied to the eye of the rabbit, effect was not acknowledged in a corneal (EHC 128 (1991), DFGOT vol.3 (1992), EU-RAR (2003)). As judging that it is not applicable to the acceptance criteria of irritation, it was set as the outside of Category.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Not possible	-	-	-	Respiratory organ: No data. Skin: We classified it as Out Of Category based on the description that positive rates were 10% or less in maximization test using the guinea pigs in EU-RAR (2003).
5 Germ cell mutagenicity	Not classified	-	-	-	Since there was a negative result with the micronucleus test on mouse red corpuscles, which is an in vivo mutagenicity test using somatic cells (EHC 128, 1991, DFGOT vol.14, 2000, EU-RAR, 2003), it was classified as out of Category.
6 Carcinogenicity	Not classified	-	-	-	Since it was classified into D in EPA (IRIS, 2005), it was considered as the outside of Category.

7	Toxic to reproduction	Not classified	-	-	-	It was considered as out of Category based on the description that specific reproductive toxicity was not observed at the dose causing general toxicity to parental animals in pregnant rat oral administration examination and in the rat multigeneration reproductive study (EHC 128 (1991), DFGOT (vol.3, 1992), PATTY (4th, 1994), EU-RAR (2003), IRIS (2005)).
8	Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation, narcotic effects)	Exclamation mark	Warning	may cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation, narcotic effects)	From description in EU-RAR (2003), ACGIH (7th, 2001), and DFGOT (vol.3, 1992) that a throat is stimulated as effect on humans, and description in DFGOT (vol.3, 1992) that the anesthetic actions was seen in the oral study on rats, it was set as Category 3 (respiratory irritation, anesthetic actions).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (liver, thyroid gland, kidneys, adrenal)	Health hazard	Warning	May cause damage to organs (liver, thyroid gland, kidneys, adrenal) through prolonged or repeated exposure	Based on the description that in feeding oral administration tests using the rat, the effects on the liver and thyroid were observed with the dosage in the Category 2 guidance value range (EHC 128 (1991), DFGOT (vol.3, 1992), EU-RAR (2003)), the description that in the feeding oral administration tests using the rat, the effects on the liver and kidney were observed with the dosage in the Category 2 guidance value range (PATTY (4th, 1994), EU-RAR (2003)), and the description that in the oral administration tests using the rat, the effects on the adrenal gland were observed with the dosage in the Category 2 guidance value range (IRIS (2005)), it was classified into Category 2 (liver, thyroid, kidney, adrenal gland). In addition, although ACGIH (7th, 2001) has description that hepatotoxicity may be occurred in high exposure levels, as the effects on human, it was classified into Category 2, since the concrete case was not indicated, and it could not fully be sure to justify the classification to Category 1.
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 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 96-hour EC50=0.45mg/L of Crustacea (Mysid shrimp), and others (EU-RAR, 2003).
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Classified into Category 1, since acute toxicity is Category 1, not rapidly degrading (BOD: 0% (existing chemical substances safety inspections data)), and bioaccumulative (BCF=1320 (existing chemical substances safety inspections data)).