

GHS Classification

ID1012

CAS 87-68-3

Physical Hazards

Butadiene, hexachloro-

Date Classified: Jul. 24, 2006 (Environmental Hazards: Mar. 31, 2006)

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	Classification not possible (Category 4 or Not classified)	-	Warning	Combustible liquid	The data obtained from materials are deviated. Therefore, if flash point and initial boiling point (can be substituted with boiling point) are not measured with an actual sample, it cannot be judged. The acceptance criteria are as follows: Category 4: 60-degC< flash point <=93 degC; out of Category: flash point >93 degC.
7 Flammable solids	Not applicable	-	-	-	Liquid (GHS definition)
8 Self-reactive substances and mixtures	Not classified	-	-	-	Classified in UNRTDG Class: 6.1
9 Pyrophoric liquids	Not classified	-	-	-	Flash point: 610degC (ICSC (J), 1997)
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 applicable	-	-	-	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 3	Skull and crossbones	Danger	Toxic if swallowed	Rat LD50 value: 350mg/kg (EHC 155, 1994; ACGIH 7th. 2001; PATTY 4th., 1994), 250mg/kg (EHC 155, 1994; IARC 20, 1979), 200mg/kg and 46mg/kg (each EHC 155, 1994; PATTY 4th. 1994; ATSDR, 1994), 200mg/kg (EHC 155, 1994; PATTY 4th., 1994). Calculated based on the data above. Based on the calculated LD50 value of 128 mg/kg, it was classified as category 3.
1 Acute toxicity (dermal)	Category 4	Exclamation mark	Warning	Harmful in contact with skin	Based on rabbit LD50 value: 1120mg/kg (EHC 156, 1994; ATSDR, 1994), it was set as Category 4.
1 Acute toxicity (inhalation: gas)	Classification not possible	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Category 1	Skull and crossbones	Danger	Fatal if inhaled	Based on mouse LC50 value (6 hours): 0.107mg/L (4 hour equivalent: 0.131mg/L (about 12.3ppm) (EHC 156, 1994)) which indicates steam with almost no mist from its vapor pressure. And it was classified as Category 1 by the ppm concentration standard.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Classification not possible	-	-	-	Classification not possible due to lack of data
3 Serious eye damage / eye irritation	Classification not possible	-	-	-	Insufficient data available.
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. Skin sensitization: We judged that there was skin sensitization property based on the description that the positive rate was 100% in the test (EHC 156 (1994)) using the guinea pigs, we classified it to be Category 1.

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)	Although it is negative in dominant lethal test using the rat which is multigeneration mutagenicity test using a germ cell (ATSDR, 1994), it is positive in oral administration and inhalation exposure by the chromosomal aberration test using the mouse marrow cell using a somatic cell, which is the in vivo mutagenicity test (EHC, 156, 1994), and there is no productive cell in vivo examination. So it is set as Category 2.
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)	It is classified into a group 3 in IARC (73, 1999), C in EPA (IRIS, 1991 evaluations), and A3 in ACGIH (7th.2001). It is considered as Category 2 based on the classification of ACGIH which is latest assessment.
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	It was considered as Category 2 since in the perinatal period medication examination (feed-mix administration from pregnancy the 17th to after-delivery the 10th) of the rat, nephrotoxicity was acknowledged also in fetus by the dose nephrotoxicity etc. is observed in dam (NTP DB, 2006).
8	Specific target organs/systemic toxicity following single exposure	Category 1 (kidneys)	Health hazard	Danger	Cause damage to organs (kidneys)	The substance was classified as Category 1 (kidneys) based on the reports of kidney tubular degeneration in an inhalation exposure test in mice after 4 hours of exposure at a concentration within the guidance values of Category 1 (EHC 156, 1994; ATSDR, 1994), and of kidney tubular necrosis in a percutaneous exposure test in rabbits at the non-lethal dose of 388mg/kg (EHC 156, 1994; ATSDR, 1994).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (liver, kidneys, bone marrow)	Health hazard	Danger	Causes damage to organs (liver, kidneys, bone marrow) through prolonged or repeated exposure	We classified it into Category 1 (liver, kidney, marrow) based on the description that in oral administration in the rat for 3-week to two-year, the denaturation, necrosis and tissue reproduction were observed in renal proximal tubule with the dosage of the guidance value range of Category 1 ((EHC 156, 1994, ACGIH 7th.2001) PATTY (4th. (1994), NTP DB (2006), and ATSDR (1994)), based on the description that the same disorder was observed also in the two-week to three-month oral study with the mouse (PATTY 4th.1994), and based on the description that in the study in feeding administration to rats and mouse with the dosage of guidance value range of Category 1, the swelling of the cell, the rise of aggregation of a basophil granule, a necrosis, and serum GPT activation in the liver were observed, and the description that in the feeding administration study for two weeks to a mouse, marrow hematopoietic cell decreases was observed with the dosage of guidance value range of Category 1 (EHC 156, 1994, ACGIH 7th.2001). PATTY (4th. (1994), NTP DB (2006), and ATSDR (1994).
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 LC50=32microg/L of Crustacea (Mysid shrimp) (CaPSAR, 2001).
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: 24% (existing chemical substances safety inspections data)), and bioaccumulative (BCF=9240 (existing chemical substances safety inspections data)).