GHS Classification

ID615 heptachlor

CAS 76-44-8 Date Classified: Jul. 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	–	–	–	Solid (GHS definition)
3	Flammable aerosols	Not applicable	–	–	–	Not aerosol products
4	Oxidizing gases	Not applicable	–	–	–	Solid (GHS definition)
5	Gases under pressure	Not applicable	–	–	–	Solid (GHS definition)
6	Flammable liquids	Not applicable	–	–	–	Solid (GHS definition)
7	Flammable solids	Not classified	–	–	–	Non-combustible (ICSC (J) (1998))
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 applicable	–	–	–	Solid (GHS definition)
10	Pyrophoric solids	Not classified	–	–	–	Non-combustible (ICSC (J), 1998)
11	Self-heating substances and mixtures	Not classified	–	–	–	Not combustible (ICSC(J) (1998))
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 metaloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At).
13	Oxidizing liquids	Not applicable	–	–	–	Solid (GHS definition)
14	Oxidizing solids	Not applicable	–	–	–	Organic compounds containing chlorine (but not oxygen and fluorine) and the chlorine is chemically bonded only to carbon and hydrogen (but not to other elements).
15	Organic peroxides	Not applicable	–	–	–	Containing no -0-0- structure
16	Corrosive to metals	Classification not possible	–	–	–	Although there is information that it corrodes metal (HSDB (Access on Jan. 2006)), test methods suitable for a solids material are not established.

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	Calculated based on rat LD50 values: 40mg/kg (MOE Risk Assessment the 1st volume, 2002, PATTY 4th, 1994, EHC 38, 1984), 90mg/kg (PATTY 4th, 1994), 100mg/kg (EHC 38, 1984, IARC 79, 2001, ATSDR, 2005), 80 to 90 mg/kg (EHC 38, 1984), 230mg/kg (ATSDR, 2005), 105mg/kg (ATSDR, 2005), and 71mg/kg (ATSDR, 2005). Since the calculated values was 59.7mg/kg, it was set as Category 3.
1	Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	It was set as Category 2 based on the lowest value of a rat. (Rat LD50 values: 195mg/kg (PATTY 4th, 1994, EHC 38, 1984, ATSDR, 2005) and 119mg/kg (EHC 38, 1984), and rabbit LD50 values: 2000mg/kg (PATTY 4th, 1994) and 780mg/kg (PATTY 4th, 1994.))
1	Acute toxicity (inhalation: gas)	Not applicable	–	–	–	Solid (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	Not classified	–	–	–	Based on description that in the rabbit skin application test both original product and 20% phthalates methyl solution show no skin irritation (PATTY (4th, 1994)), it was classified as the outside of Category.
3	Serious eye damage / eye irritation	Classification not possible	–	–	–	No data available
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	–	–	–	No data available
5	Germ cell mutagenicity	Not classified	–	–	–	We found the negative results (IARC 79 (2001) ACGIH (7th, 2001) and ATSDR (2005)) for the dominant lethality tests using the rodents, which were the in vivo over generation mutagenicity tests using the germ cells, and found no positive results by the in vivo mutagenicity test using the germ cells and by the in vivo mutagenicity test using the somatic cells. Therefore we classified it as Out Of Category.

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 was classified into group 2B by IARC (IARC 79, 2001), into A3 by ACGIH A3 (ACGIH 7th, 2001), into B2 according to EPA in 1993 (IRIS, 2006), into category 3 by EU (EU-Annex I, 2006), and into 2B by Japan Society for Occupational Health (Occupational Health Society advice, 2005). So it was set as category 2.
7	Toxic to reproduction	Category 1B	Health hazard	Danger	May damage fertility or the undorn child	There is no description about the general toxicity to parent animals. Since there are descriptions that increased mortality of offspring and increased number of resorptions embryo were observed in the oral administration fertility study and the oral administration study in pregnancy on rat and mouse (ACGIH (7th, 2001), EHC 38 (1984), IARC 79 (2001), ATSDR (2005), and PATTY (4th, 1994)), and there is a description that the increased mortality rate in the offspring was observed in the rat oral administration study (ATSDR (2005)) at dosage even with the parents without specific toxicity dose, it was classified into Category 1B.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (liver, nervous system)	Health hazard	Danger	Cause damage to organs (liver, nervous system)	Based on the descriptions that in the oral medication test using rats a rise of irritability, shivering and the spasm were identified with the given dose of guidance value range of Category 1(PATTY (4th, 1994) and ATSDR (2005)), and that the unicellular necrosis of liver and air vessel-ization of hepatic cells were identified with the given dose of guidance value range of Category 1 in the oral midication test using rats (ATSDR (2005)),,it was set as Category 1 (liver, nervous system).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (liver, nervous system, kidneys)	Health hazard	Danger	Causes damage to organs (liver, nervous system, kidneys) through prolonged or repeated exposure	It was classified to as Category 1 (liver, nervous systems, kidney) according to the description that the effects on liver as fatty degeneration and hypertrophy of hepatocyte etc. was acknowledged with the given dose of the guidance value range of Category 1 in the oral study using rats, mice, or dogs of MOE Risk Assessment the 1st volume (2002), ACGIH (7th, 2001), ATSDR (2005), EHC 38 (1984), and PATTY (4th, 1994), and the description that convulsion and moderate fatty infiltration of the epithelium of the renal tubules in the oral study using rats of ACGIH (7th, 2001) and EHC 38 (1984) were acknowledged with the given dose of the guidance value range of 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 LC50=0.03microg/L of Crustacea (Pink shrimp) (MOE Risk Assessment No.1, 2002).
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=17300 (existing chemical substances safety inspections data)).