

GHS Classification

ID611

endrin

CAS 72-20-8

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) (2000), Hommel(1991) Card No.269)
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), 2000; Hommel, 1991, Card No.269)
11 Self-heating substances and mixtures	Not classified	-	-	-	Non-combustible (ICSC (J), 2000; Hommel, 1991, Card No.269)
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	-	-	-	Solid (GHS definition)
14 Oxidizing solids	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).
15 Organic peroxides	Not applicable	-	-	-	Containing no -O-O- structure
16 Corrosive to metals	Classification not possible	-	-	-	Test methods applicable to solid substances are not available. Slightly corrosive to metals. (HSDB, Access on Jan. 2006)

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 2	Skull and crossbones	Danger	Fatal if swallowed	Calculated based on rat LD50 values: 3mg/kg (MOE Risk Assessment the 1st volume, 2002), 5.3mg/kg (ACGIH 7th, 2001), 13mg/kg (PATTY 4th, 1994), 9, 4, and 27mg/kg (EHC 130, 1992), 16.8, 7.3, 40, 7.5, and 5.3mg/kg (EHC 130, 1992, ATSDR, 1996). Since the calculated values was 6.54mg/kg, it was set as Category 2.
1 Acute toxicity (dermal)	Category 1	Skull and crossbones	Danger	Fatal in contact with skin	Calculated based on rat LD50 value: 18mg/kg (MOE Risk Assessment the 1st volume, 2002), 15mg/kg (ACGIH 7th, 2001, ATSDR, 1996, EHC 130, 1992), 5mg/kg (DFGOT vol.18, 2002, EHC 130, 1992) and 12.5mg/kg (EHC 130, 1992). Since the calculated values was 8.07mg/kg, it was set as Category 1.
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	-	-	-	There is description that 3-5 among 10 examples died from the mists and dust concentration of 2mg/L in the test which carried out exposure to the rat for 1 hour (4-hour equivalent 0.5 mg/L) (EHC 130 (1992), DFGOT (vol.18, 2002)). But there is no data of LC50 value. Therefore, it cannot be classified since the category cannot to be specified.
2 Skin corrosion / irritation	Not classified	-	-	-	From descriptions that 24 hour exposure test on rabbits show no skin effects (EHC 130 (1992), DFGOT (vol.18, 2002), and ATSDR (1996)), it was judged that there was no skin irritation and was classified as out of Category.
3 Serious eye damage / eye irritation	Classification not possible	-	-	-	No data available
4 Respiratory/skin sensitization	Classification not possible; Skin sensitization: Classification not possible	-	-	-	Respirator: No data Skin: Although there was description that skin sensitization was not identified in the occupational evidence of exposure by EHC 130 (1992), since there was no data to deny its toxicity clearly, it was decided that it could not be classified without having sufficient data to put it outside of the Category.
5 Germ cell mutagenicity	Not classified	-	-	-	There was a negative result (EHC 130, 1992) in the dominant lethality test using the mouse which was an in vivo over generation mutagenicity test using the germ cells, and there was no data of the in vivo mutagenicity test using the germ cells and the somatic cells. So we classified it as Out Of Category.
6 Carcinogenicity	Not classified	-	-	-	It is classified into A4 (ACGIH 7th, 2001) according to a group 3 (IARC Suppl.7, 1987) and ACGIH and was classified into D (IRIS, 2006) according to IARC by EPA. So it carried out the outside of Category.

7	Toxic to reproduction	Not classified	-	-	-	Since there is the description that there is no obvious reproductive toxicity at the dose causing general toxicity to parent animals in the oral administration during pregnancy using rat, mouse, or hamster, and in the rat three generation reproduction study (MOE Risk Assessment The 1st volume (2002), EHC 130 (1992), The rat of DFGOT (vol.18, 2002) and ATSDR (1996)), it is considered as on the outside of Category.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system, liver, kidneys)	Health hazard	Danger	Cause damage to organs (nervous system, liver, kidneys)	According to the descriptions that intense spasm was identified in the human evidence of exposure (MOE Risk Assessment (Vol 1,2002), ATSDR (1996), ACGIH (7th, 2001), DFGOT (18 vol. 2002) and EHC 130 (1992)), and that in the animal test by oral administration, neurological symptoms such as spasm and paralysis, and cell necrosis of kidney, infiltration of inflammatory cell, etc such as localized necrosis of liver, inflammatory response, Kupffer cell hyperplasia were identified within the guidance value range of Category 1 (ACGIH (7th, 2001), DFGOT (18 vol. 2002) or ATSDR (1996)). So it was set as Category 1(nerve systems, liver, kidney)
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (nervous system, liver)	Health hazard	Danger	causes damage to organs (nervous system, liver) through prolonged or repeated	It was classified to as Category 1 (nervous systems, liver) according to the description that convulsions and hyperexcitability were shown in the oral study using rats, mice, or dogs of DFGOT (vol.18, 2002), ATSDR (1996), EHC 130 (1992), and the description that vacuolation of hepatocyte in the oral study using dogs of the 1st volume (2002) of the MOE Risk Assessment and the description of the liver damage in the oral study using mice of DFGOT (vol.18, 2002) were both acknowledged in 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=0.000037mg/L of Crustacea (Pink shrimp) (EHC130, 1992).
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=12600 (existing chemical substances safety inspections data)).