

GHS Classification

ID785

CAS 298-02-2

Physical Hazards

O,O-diethyl ethylthiomethyl phosphorodithioate

Date Classified: Jun. 20, 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	Not classified	-	-	-	Since its flash point being 110 degC or more (Closed Cup) and 160 degC (Open Cup), which are beyond Category 4 (standard: flash point being more than 60 degC and 93 degC or less) of GHS, it was classified as out of Category.
7 Flammable solids	Not applicable	-	-	-	Liquid (GHS definition)
8 Self-reactive substances and mixtures	Classification not possible	-	-	-	Classification not possible due to lack of data, though the substance contains P-O bonds as chemical groups with self-reactive properties present.
9 Pyrophoric liquids	Not classified	-	-	-	Since flash measurements was performed at 160 degC (ICSC (2000)) and it judged that there was no spontaneous combustibility in normal temperatures, it carried out the outside of Category.
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	Classification not possible	-	-	-	Classification not possible due to lack of data, though containing oxygen bonded to phosphorus.
14 Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no -O-O- structure
16 Corrosive to metals	Classification not possible	-	-	-	No data available

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 1	Skull and crossbones	Danger	Fatal if swallowed	It was set as Category 1 based on rat LD50= 1.5mg/kg calculated from eight data (ACGIH (2005), PDs No.75 (1988)).
1 Acute toxicity (dermal)	Category 1	Skull and crossbones	Danger	Fatal in contact with skin	It was set as Category 1 based on rat LD50= 3.8mg/kg calculated from eight data (ACGIH (2005), PDs No.75 (1988)).
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)	Category 1	Skull and crossbones	Danger	Fatal if inhaled	The saturated vapor pressures concentrations pressure of this product is 1.0ppm (0.011mg/L). The lower value of the data of both sexes in rat 1 examination (ACGIH (2005)), this is indicated to have done in mist, was adopted. And it was set as Category 1 based on LC50 = 0.0028mg/L.
2 Skin corrosion / irritation	Classification not possible	-	-	-	No data available
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	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	No data available
5 Germ cell mutagenicity	Not classified	-	-	-	Based on the negative results (ACGIH (2005), JMPR 416 (1977)) for the in vivo dominant lethality examination using the mouse, and the chromosomal aberration test using rat marrow cells. We classified it as Out Of Category according to the technical guideline.
6 Carcinogenicity	Not classified	-	-	-	Based on what is classified into A4 according to ACGIH (ACGIH (2005)), it carried out the outside of Category.

7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	It was classified into category 2 based on the statement that effects as decrease neonatal lethality and heart hypertrophy are observed at dose causing toxicity to parents or not indicating about parent toxicity (ACGIH (2005), JMPR 416 (1977)).
8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system)	Health hazard	Danger	Cause damage to organs (nervous system)	A statement that cholinergic neurotoxicity is discovered in a rat with the dosage of guidance value within the Category 1 (ACGIH (2005)). And based on the statement that cholinergic neurotoxicity is seen by humans (ACGIH (2005), ICSC (J) (2000)), it is classified into Category 1 (nerve systems).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (nervous system)	Health hazard	Danger	Causes damage to organs (nervous system) through prolonged or repeated exposure	Based on the statement that cholinergic neurotoxicity was affected in the animal with the given dose of the guidance value range of Category 1 (ACGIH and (2005), JMPR 882 (1994)) and that cholinesterase neurologic typical symptoms are observed in human (ACGIH (2005)), it was classified into Category 1 (nerve systems).
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=4microg/L of Crustacea (Amphipod) (HSDB, 2004).
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 was Category 1, supposed not rapidly degrading (BIOWIN), though supposed less bioaccumulative (log Kow=3.56(PHYSROP Database, 2005)).