

GHS Classification

ID1025

ethoprophos

CAS 13194-48-4

Date Classified: Mar. 15, 2007 (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	-	-	-	Not classified because of its flash point: 140degC(closed cup) (PM 13th, 2003)
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	-	-	-	Uses are agricultural chemicals, and even if it contacts the normal temperature air, it does not ignite spontaneously.
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 classified	-	-	-	Stable to wate (PM, 13th, 2003)
13 Oxidizing liquids	Classification not possible	-	-	-	No data available
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	-	-	-	Classification not possible due to lack of data. Non-corrosive to metals (HSDB, 2004)

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	After calculation based on the rat oral LD50 value (52, 33 and 56mg/kg) (JMPR 629 (1983), JMPR961 (1999)), it was classified as category 2.
1 Acute toxicity (dermal)	Category 1	Skull and crossbones	Danger	Fatal in contact with skin	Rat dermal LD50 = 226mg/kg. (Since LD50 value based on three data (226, 1280 and 424mg/kg) (JMPR 961 (1999)) was lower than the lowest value of the used data, the lowest value of used data was adopted.) Moreover, rabbit dermal LD50 = 8.5mg/kg. (Since LD50 value = 26mg/kg (PDS 70 (1988)) and 8.5mg/kg (JMPR 961 (1999)), and high toxicity value is adopted.) Both were compared and it was set as Category 1 from the value with a lower numerical value (8.5mg/kg).
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 2	Skull and crossbones	Danger	Fatal if inhaled	Category 2 because of "SPECIES: Rat; ENDPOINT: LC50(4hr.); VALUE:0.250 mg/L"(JMPR 961, 1999)
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	Since the slight stimulus (slight irritation) was seen with the rabbit, it was set as Category 3.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	Since actinic erythema (moderate) and the scleral and angiogenesis of nictitating membrane were observed in eyes of rabbits, it was classified into Category 2A-2B. [Indication] 2A is recommended based on the safety, when the Category needs to subdivide.
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)-	Respiratory sensitization: No data. Skin sensitization: It was classified as R43 according to the Risk epigrams of EU and it was suggested that it had skin sensitization property, however, there was no data which upholds this information concretely, therefore we presupposed that we could not classify it.
5 Germ cell mutagenicity	Not classified	-	-	-	The result of the in vivo mutagenicity (the chromosomal aberration test using rat marrow cell, the dominant fatality examination using a rat) is negative (one in the dominant fatality examination using a rat is equivocal) (JMPR 629(1983), JMPR 961(1999)), it carried out the outside of Category by the classification guidelines.
6 Carcinogenicity	Classification not possible	-	-	-	There is data in which male rats show the increase in thyroid C-cell adenoid tumor and adrenal gland malignant brown androblastoma (JMPR 629 (1983), PDS 70 (1988), HSDB (2004)), and increase of endometrial polyps is shown by a female rats (HSDB (2004)). But there was no data which leads to human's carcinogenicity directly and evaluation by evaluation organization was not conducted. So it was presupposed that it cannot be classified.

7	Toxic to reproduction	Not classified	-	-	-	Even the result of the animal experiments using rat or rabbit is uninfluent, or impact is seen, the extent is small (ossification insufficiency etc.), moreover, since impact was not seen in the two-generation test of rat and the rabbit carried out by GLP based on the OECD guideline. So it was considered as the outside of Category (PDS 70 (1988), JMPR 629 (1983), JMPR 961 (1999)).
8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system)	Health hazard	Danger	Cause damage to organs (nervous system)	The substance was classified as Category 1 (nervous system). Because there is a report in a Priority document that effects on the nerves originating from cholinesterase inhibition (tremors, protrusion of the eyeballs, impaired coordination and excessive salivation) were observed in rats after exposure to an amount equivalent to the guidance value of Category 1 (JMPR 961(1999)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (liver); Category 2 (nervous system)	Health hazard	Danger	Causes damage to organs (liver) through prolonged or repeated exposure; May cause damage to organs (nervous system) through prolonged or repeated exposure	In the document of Priority 1, we found the finding which suggests hepatotoxicity to a dog with the dose which is equivalent to Category 1 in the guidance value range (JMPR 765 (1987)), therefore we classified it into Category 1 (liver). Furthermore, in the document of Priority 1, the subtle changes (vomiting, a loose stool, etc.) which are considered to be based on cholinesterase inhibition were observed to a rat with the dose which is equivalent to Category 2 in the guidance value range (JMPR 629 (1983)), therefore we classified it into Category 2 (nervous 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=0.02ppm of Crustacea (Mysid shrimp) (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=3.59(PHYSPROP Database, 2005)).