

GHS Classification

ID1219

Fluvalinate

CAS 69409-94-5

Date Classified: Oct. 23, 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	-	-	-	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	Category 4	-	Warning	Combustible liquid	There is a description of flash point being 90 degC (as tau-Fluvalinate of CAS No.102851-06-9) in PM (13th, 2003), and it was classified as Category 4.
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 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 oxygen, fluorine and chlorine and these elements are chemically bonded only to carbon (but not to other elements).
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 though "Non-corrosive to slightly corrosive, depending upon the metal" (HSDB, 2003)

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	Based on the oral LD50 = 261mg/kg in rats (RTECS(2003), HSDB(2003)), the substance was classified as Category 3.
1 Acute toxicity (dermal)	Not classified	-	-	-	It was set as the outside of Category based on rat dermal LD50 >20mg/kg (RTECS (2003)).
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	Based on the inhalation to a rat LC50 (4hr) = 0.439ppm (since the saturated concentration is 0.002mg/L, it is presumed that the inhalation study is performed in mist conditions) (RTECS (2003)), it was set as Category 2.
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	Since there was description that it has "Mild (it is slight)" irritation to a rabbit and that burning sensations is given to human skin by exposures of synthetic pyrethroids compounds (all are HSDB(s) (2003)), it was set as Category 3.
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	In STANDARD DRAIZE TEST to a rabbit, from the description that there is "mild" irritation (RTECS(2003)), and the description that "moderate" eye irritation is shown to a rabbit, and pyrethroid compound gives a stimulation to the human eye (HSDB(2003)), it is set as Category 2B.
4 Respiratory/skin sensitization	Classification not possible; Skin sensitization: Not classified	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	Respiratory sensitization: Since data is insufficient. In addition, although it was not what specified the this product, description that a pyrethroid compounds causes pneumallergie was seen (HSDB (2003)). Skin sensitization: since effect was not seen in the guinea pig skin sensitization test (the Buehler method) using the 20% wettable powders of this substance (Pesticide Science Society of Japan (1990)), it carried out the outside of Category.
5 Germ cell mutagenicity	Classification not possible	-	-	-	Although there is negative knowledge in in vitro mutagenicity test (Ames test, chromosome aberration test) (Pesticide Science Society of Japan (1990)), there is no in vivo data and it cannot be classified because of insufficient data.
6 Carcinogenicity	Not classified	-	-	-	Since the finding which suggests carcinogenicity in the carcinogenicity tests using rats and mouse was not acknowledged, (Pesticide Science Society of Japan (1990)), it carried out the outside of category.
7 Toxic to reproduction	Not classified	-	-	-	Since effect was not seen in the two-generation fertility study of a rat and the teratogenicity test of a rat and rabbit (Pesticide Science Society of Japan (1990)), it was set as the outside of Category.

8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system)	Health hazard	Danger	Cause damage to organs (nervous system)	Since at a single dose (pathway unknown) in the pharmacological tests using rat and a mouse, the influence on a central nervous system (hypothermia, muscle relaxant effect, lack of motor coordination) and the influence on the peripheral nervous system (mild muscle contraction) were observed in the guidance value of Category 1 (Pesticide Science Society of Japan, 1990), it was considered as Category 1 (nervous systems). In addition, synthetic pyrethroid compound is nerve poison which acts on axonal of peripheral and central nervous system by making a sodium channel into site of action (EHC (J) 98 (1990)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (skin)	Health hazard	Danger	Causes damage to organs (skin) through prolonged or repeated exposure	Since the dermatoses were observed in the 13-week subacute toxicity study in a rat with the guidance value of Category 1 (Journal of Pesticide Science of Japan (1990)), it was classified into Category 1 (skin). In addition, although synthetic pyrethroids is a neurotoxin acting on axon of peripheral and central nervous system (EHC(J)98(1990)), the acute effect on the nerve is not indicated in the repeated exposure test using a rat, a mouse, and a dog (Journal of Pesticide Science of Japan (1990)).
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=0.018ppb of Crustacea (Mysid shrimp) (AQUIRE, 2003).
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, supposed not rapidly degrading (BIOWIN), and bioaccumulative (log Kow=6.81 (PHYSPROP Database, 2005)).