GHS Classification

ID1218 Esfenvalerate

CAS 66230-04-4 Date Classified: Feb. 20, 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	–	–	–	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	Classification not possible	–	–	–	Classification not possible due to lack of experimental data, though "Flammable"(ICSC(J), 2004)
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-pyrophoric when in contact with air at a room temperature and used as agricultural chemicals.
11	Self-heating substances and mixtures	Classification not possible	–	–	–	Test methods applicable to solid (melting point <= 140degC) 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 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 oxygen and chlorine and these elements are chemically bonded only to carbon (but not to other elements).
15	Organic peroxides	Not applicable	–	–	–	Organic compounds containing no -0-0- structure
16	Corrosive to metals	Classification not possible	–	–	–	Test methods applicable to solid substances are not available.

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 value of 90mg/kg in rats (JMPR (2002)), the substance was classified as Category 3. [Note] Also refer to fenvalerate (alpha-cyano-3-phenoxybenzyl = -2-(4-chlorophenyl)-3-methylbutyrate) (ID 269, Chemical Abstracts Service: 51630-58-1), which is the optical isomer of this substance.
1	Acute toxicity (dermal)	Classification not possible(Category 5 or Not classified)	–	Warning	May be harmful in contact with skin	There is a report of rabbit dermal LD50 >2g/kg (JMPR (2002), HSDB (2003), RTECS (2004)) and rat dermal LD50 >5g/kg (JMPR (2002), RTECS (2004)). But Category cannot be specified, it cannot be classified (Category 5 or outside of Category).
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)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	It was set as Category 2 based on inhalation by mists in a rat LC50 (4hr) = 0.48mg/L (JMPR (2002)).
2	Skin corrosion / irritation	Category 3	–	Warning	Causes mild skin irritation	Since there is description that human skin is stimulated slightly (ICSC (J), (2004)), and irritation was slightly indicated in the test using a rabbit (JMPR (2002)), it was set as Category 3. In addition, also refer to a fenvalerate (ID 269, Chemical Abstracts Service:51630-58-1).
3	Serious eye damage / eye irritation	Category 2B	–	Warning	Causes eye irritation	There is description that the human eye is stimulated mildly (ICSC (J) (2004)), and mild stimulation for the eyes was admitted in the test using a rabbit (JMPR (2002)). So it was set as Category 2B. In addition, refer to a fenvalerate (ID269, CAS: 51630-58-1).
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Category1	(Respiratory sensitization)-; (Skin sensitization)Exclamation mark	(Respiratory sensitization)-; (Skin sensitization)Warning	(Respiratory sensitization)-; (Skin sensitization)May cause allergic skin reaction	Respiratory sensitization: no data available. Skin sensitization : by repetition or long-term contact to human, there is description (ICSC(J)(2004)) that skin sensitization may be caused, although individual reaction is slight, high sensitization rate is seen (JMPR (2002)) in the maximization test using a guinea pig, it was set to Category 1. In addition, negativity is reported by a guinea pig Buhler examination and another skin sensitization study (test unknown) (JMPR (2002)). Moreover, in the fenvalerate (CAS: ID269, 51630-58-1), skin sensitization is considered as Category 1.
5	Germ cell mutagenicity	Not classified	–	–	–	There is negative result in in vivo small core test using mouse bone marrow cells, and in in vitro mutagenicity test (the gene mutation test and chromosome aberration test using a cultured cell) (all being JMPR(s) (2002)). So it is classified as the out of the Category. In addition, the fenvalerate (ID 269, Chemical Abstracts Service:51630-58-1) is considered as the outside of Category.

6	Carcinogenicity	Classification not possible	–	–	–	Although it is considered as oncogenic by administration test of rat for two years (RTECS (2004)), data is insufficient and it cannot be classified. In addition, the fenvalerate (ID 269, Chemical Abstracts Service:51630-58-1) is carried out the outside of Category.
7	Toxic to reproduction	Not classified	–	–	–	In the two-generation reproduction toxicity studies using a rat, and the teratogenicity study using rats and rabbits, the clear reproductive and developmental toxicity in child animals was not acknowledged (all are JMPR (2002)), so it was set as the outside of Category. In addition, the fenvalerate (ID 269, CAS: 51630-58-1) is set as the outside of Category.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system); Category 3 (respiratory tract irritation)	Health hazard	Danger	Cause damage to organs (nervous system); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract	It was considered as Category 1(nerve systems) and Category 3 (respiratory irritant) based on the description that in a rat, at the dose which is equivalent to Category 1 in a guidance value the effect on unusual spasms, muscle fibrillation, ataxie, tremor and limb palsy, and nervous systems are observed (JMPR (2002)), and it affects the human nervous system, and stimulates mildly the airway (ICSC (2004)). In addition, also refer to a fenvalerate (ID 269, Chemical Abstracts Service: 51630-58-1).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (nervous system)	Health hazard	Warning	May cause damage to organs (nervous system) through prolonged or repeated exposure	Since there was description that the influence on nervous systems, such as salivation, tremor, vomiting, and twitching of extremities were observed in rats or mouse, with the dose which is equivalent to Category 2 with a guidance value(JMPR(2002)), it was classified into Category 2 (nervous systems). In addition, refer to a fenvalerate (ID269, CAS: 51630-58-1).
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=0.07ppb of fishes (Rainbow trout) (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=6.22 (PHYSPROP Database, 2005)).