

GHS Classification

ID1141

Emamectin benzoate

CAS 155569-91-8

Date Classified: Sep. 20, 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 classified	-	-	-	Not classified because of the oxygen balance calculated at -221.2, lower than -200 of the criteria, though containing N-O bonds as chemical groups associated with explosive properties present.
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	-	-	-	No data available
8 Self-reactive substances and mixtures	Classification not possible	-	-	-	Classification not possible due to lack of data, though the substance contains unsaturated C-C bonds as chemical groups with explosive or self-reactive properties present
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Classification not possible	-	-	-	No data available
11 Self-heating substances and mixtures	Classification not possible	-	-	-	No data 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	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Organic compounds containing oxygen (but not chlorine and fluorine) and the oxygen is chemically bonded only to carbon and hydrogen (but not to other elements).
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no -O-O- 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	Of the rat LD50 values obtained from the 2 oral toxicity tests, based on the lower value: LD50 = 63mg/kg (Agricultural Chemical Registration Data), we classified the substance as Category 3.
1 Acute toxicity (dermal)	Category 4	Exclamation mark	Warning	Harmful in contact with skin	It was set as Category 4 based on rat LD50 = 2000mg/kg of the dermal administration test (Agricultural Chemical Registration Data).
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 4	Exclamation mark	Warning	Harmful if inhaled	It was set as category 4 based on rat LC50 = 1.93mg/L (Agricultural Chemical Registration Data) of an inhalation exposure test.
2 Skin corrosion / irritation	Not classified	-	-	-	In the primary skin irritation test using a rabbit, it carried out the outside of Category based on the statement that an irritant effect was not admitted (Agricultural Chemical Registration Data).
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	There is the description that in the eye primary irritation study using rabbit, corneal opacity, iris congestion, and redness, droopy and the discharges of the conjunctiva were observed. And the score was 21.75, but it disappeared 13 days after (Agricultural Chemical Registration Data). Therefore, it was classified into Category 2A.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Not classified	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	Respiratory sensitization: no data available. Skin sensitization: based on the statement (Agricultural Chemical Registration Data) that skin sensitization was not accepted in the skin sensitization study using a guinea pig, it carried out the outside of Category.
5 Germ cell mutagenicity	Not classified	-	-	-	There is no data of human administration cost epidemiology, an administration cost mutagenicity test, and productive cell in vivo mutagenicity test. And the statement (Agricultural Chemical Registration Data) with negativity by the somatic cell in vivo mutagenicity test (in vivo chromosomal aberration test using mouse bone marrow cells). So it carried out the outside of Category.
6 Carcinogenicity	Not classified	-	-	-	Since in carcinogenicity test in rat and mouse treatment-related increased tumor was not observed (Agricultural Chemical Registration Data), it was out of the Category.

7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	In the two-generation reproduction examination and teratogenicity test using a rat, by medication of the dosage as which general toxicity is regarded in parent animals. It was referred to as Category 2 based on the statement that decline in the pregnancy rate and a fertility of parent animals was seen, and the tremore, hindlimb disorder, and the inhibition of increase weight in a child animals, and the inhibition of increase weight, and skeletal deformity were seen in fetus (Agricultural Chemical Registration Data).
8	Specific target organs/systemic toxicity following single exposure	Category 1 (systemic toxicity, nervous system)	Health hazard	Danger	Cause damage to organs (systemic toxicity, nervous system)	As effects on laboratory animals, in a rat, at the dose within the range of guidance value in Category 1 (32–91.4mg/kg), the symptoms such as tremor, the decrease in locomotor activity, ptosis, bradypnea, lateral positions, contamination of hair with urine, and the bloody secretion of a nose and eyes were observed, and in a mouse acute oral administration test, at the dose within the range of guidance value in Category 1 (70–192mg/kg), the symptoms, such as tremor, ataxia, blepharoptosis, hypokinesia, bradypnea, and a lateral recumbent position, were observed (Agricultural Chemical Registration Data). It was considered as Category 1 (systemic, nervous systems) based on the above.
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	It was classified into Category 1 (nerve systems) based on the description that in the subacute toxicity study using a rat with the dose of 0.8–2.5 mg/kg weight(within the range of guidance value in Category 1), the decreased weight gain, tremor, the vacuolation of a neuron, the degeneration of a spinal cord and the sciatic nerve, atrophy of skeletal muscle and weakening of grip strength were observed (Agricultural Chemical Registration Data).
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 48-hour EC50=1microg/L of Crustacea (Daphnia magna) (Agricultural Chemical Registration Data, 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 was Category 1, supposedly bioaccumulative (log Kow=5.77 (Agricultural Chemical Registration Data, 2004)), and rapid degradability is unknown.