

## GHS Classification

**ID1269**

**Fentin hydroxide**

**CAS 76-87-9**

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	-	-	-	Although it is combustible (ICSC (J) 2005; HSDB, 2005), there is no test data, and it cannot be classified.
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 classified	-	-	-	Stable to water (the water solubility is obtained)
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Classification not possible	-	-	-	No data available
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	Category 3 based on SPECIES: Rat (female); ENDPOINT: LD50; VALUE: 156 mg/kg; REFERENCE SOURCE: JMPR 827 (1991), CIACD 13 (1999)
1 Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	It was set as Category 2 based on the lower value (127mg/kg)(from rat dermal LD50 = 1600mg/kg and rabbit dermal LD50 = 127mg/kg (JMPR 827, 1991;CICAD 13, 1999)).
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 rat inhalation LC50 = 0.06mg/L/4H (JMPR 827, 1991).
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	It was slight response in tests for rabbit skin irritation (JMPR 827, 1991). But it was set as category 2 since the moderate irritation was indicated in the human epidemiological findings (CICAD 13, 1999).
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	From the statement that the eye of a rabbit (JMPR 827, 1991) and a guinea pig (RTECS, 2005) is stimulated strongly, and the statement that the human eye is stimulated strongly (ICSC, 2005), it was set as Category 2A-2B. In addition, the detailed categorization is difficult.
4 Respiratory/skin sensitization	respiratory sensitization: Classification not possible; Skin sensitization: Not possible	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	Respiratory sensitization: no data available. Skin sensitization: since it was negative (CICAD 13, 1999) in guinea pig skin sensitization test (Buehler method and maximization method), an allergic reaction was not admitted in the human patch test (CICAD 13, 1999), it considered as the outside of Category.
5 Germ cell mutagenicity	Not classified	-	-	-	There is the negativity in the rat dominant fatality test, a mouse bone marrow small core test, and a Chinese hamster marrow chromosome aberration test (JMPR 827, 1991; CICAD 13, 1999), and there is the conclusion of "Triphenyl tin compound does not indicate genotoxicity" in CICAD 13 (1999) as a result of evaluation of a series of triphenyl tin compound. So it is classified as the out of the Category. In addition, although an Ames test indicates negative, the positivity is also seen in the mouse lymphoma test or the in vitro chromosome aberration test (JMPR 827, 1991). Moreover, although the positivity in an in vivo mouse peripheral blood small core test and an in vitro small core test is reported these days (RTECS, 2004). But all of the grade of the reaction were weak and dose responses was not clear in in vivo, either, the weights of hazards to humans was judged to be a not high.

6	Carcinogenicity	Not classified	-	-	-	Some tumor discoveries were acknowledged in the carcinogenic tests using mouse and rats. But the WHO experts group didn't consider them significant into, and concluded that there is no carcinogenic in triphenyl tin (CICAD 13, 1999). Moreover, the organotin compounds was set to A4 (not classified with a the human carcinogen) in ACGIH (ACGIH-TLV, 2005). Therefore, it carried out the outside of category.
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Since influences on reproduction or generating (embryo absorption, hydrocephalus, etc.) were seen in rat or the hamster in the dose which indicates maternal toxicity (CICAD 13, 1999), it was set as Category2.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system); Category 3 (respiratory tract irritation)	Health hazard	Danger	Causes damage to organs (central nervous system); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation)	Since in single time oral administrations to animals, central nervous systems condition, such as vomiting, a tremor, and a deep sleep, is observed in within the range of guidance value in Category 1 (CICAD 13, 1999), and human central nervous systems may have been affected in ICSC (2005), it was considered as Category 1 (central nervous systems). Moreover, it was considered as Category 3 (respiratory irritant) from description (ICSC, 2005) that a respiratory tracts is stimulated.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (immune system)	Health hazard	Danger	Causes damage to organs (immune system) through prolonged or repeated exposure	Since in a mouse and a rat, decrease of immune cell numbers and decrease in immunoglobulin concentration are observed in the guidance concentration range of Category 1(CICAD 13, 1999) and triphenyl tin compounds may affect an immune system and may impair that function (CICAD 13, 1999), it was classified into Category 1 (immune 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=7.1microg/L (water oxidization triphenyltin concentration equivalent: 7.4microg/L) of fishes (Fathead minnows) (CICAD13, 1999).
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, not rapidly degrading (BOD: 0% (existing chemical substances safety inspections data)), and bioaccumulative (BCF=7100 (existing chemical substances safety inspections data)).