

GHS Classification

ID686

sulfotep

CAS 3689-24-5

Date Classified: Jul. 24, 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	Not classified	-	-	-	Although it was combustible, since the data on flash point was not found, based on the UNRTDG class 6.1, it was considered as out of Category.
7 Flammable solids	Not applicable	-	-	-	Liquid (GHS definition)
8 Self-reactive substances and mixtures	Not classified	-	-	-	Not classified based on UNRTDG Class: 6.1, though containing P-O bonds as chemical groups associated with self-reactive properties present
9 Pyrophoric liquids	Not classified	-	-	-	Based on the UNRTDG class 6.1, it carried out the outside of Category.
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 classified	-	-	-	Not classified because of UNRTDG Class: 6.1 though containing oxygen bonded to other than carbon and hydrogen.
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	-	-	-	Although there is a statement (Merck (13th, 2001)) of corroding steel, since there is no rest of database, it cannot be classified.

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	It was set as Category 2 based on LD50=5.35 mg/kg. This value was calculated by ten data of rats(ACGIH(2005), DFGOT vol.13(1999)).
1 Acute toxicity (dermal)	Category 1	Skull and crossbones	Danger	Fatal in contact with skin	Rat LD50 = 262mg/kg (ACGIH (2005), DFGOT vol.13 (1999)), was compared with the lower LD50 = 5mg/kg among rabbit two data (ACGIH (2005), DFGOT vol.13 (1999)). And it was set as Category 1 based on the lower LD50 = 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 1	Skull and crossbones	Danger	Fatal if inhaled	Since the saturated vapor pressures concentrations pressure of this product is 0.2ppm, it is thought that the inhalation experiments was conducted in mist conditions. Based on LC50 = 0.038mg/L which is lower value among two rat data (ACGIH (2005), DFGOT vol.13 (1999), PATTY (5th, 2001)), it was set as Category 1.
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	There are results that skin irritation was not observed on rabbit (ACGIH and (2005), DFGOT vol.13 (1999), and PATTY (5th, 2001)), however, there are many descriptions on humans that it stimulates skin and causes disorder (ACGIH (2005), ICSC (J), (1999), HSDB (2005), HSFS (2000), SITTING (2002)). Since there was no statement about the disorder and concrete description or a grade of the stimulativeness on humans, taking the larger side with danger, it was classified as Category 2.
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Based on a statement although a stimulus and redness were acknowledged in the eye with the rabbit, it recovered within 24 hours (ACGIH and (2005), DFGOT vol.13 (1999), PATTY (5th, 2001)), and that an eye was stimulated in humans and pains and blurred visions were produced (ICSC (J), (1999), HSFS (2000), SITTING (2002)), it was set as Category 2B.
4 Respiratory/skin 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: Although there was a statement that contact dermatitis was produced by chronic exposures in humans(HSDB (2005)), it was the only statement on hand and the number of cases was unknown. Therefore, it was decided that it could not be classified due to the insufficiency of data..
5 Germ cell mutagenicity	Not classified	-	-	-	We found no results of human over generation epidemiology, and it gave negative for the dominant lethality examination with the mouse (ACGIH (2005), DFGOT vol.13 (1999), PATTY (5th, 2001), negative for the micronucleus test with mouse bone marrow cells (DFGOT vol.13 (1999), PATTY (5th, 2001)). Therefore we classified it as Out Of Category.
6 Carcinogenicity	Not classified	-	-	-	Based on being classified into A4 according to ACGIH (ACGIH (2005)), it considered as the outside of Category.

7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	It is observed that no effects on reproduction of parents and development and growth of offsprings in multiple organogenetic period administration tests in rats and rabbits (ACGIH (2005), DFGOT vol.13 (1999), PATTY (5th, 2001)) and in a rat two-generation administration test (DFGOT vol.13 (1999)), but it is observed increase embryo abortion and decrease fetal weight at dose occurring toxicity on maternal animal in one rat organogenetic period administration test (DFGOT vol.13 (1999)). Based on this data, it was classified into class 2.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system); Category 3 (respiratory tract irritation)	Health hazard; Exclamation mark	Danger; Warning	Cause damage to organs (nervous system); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation)	In many studies using rat, mouse, rabbit, dog and cat, there is the description about the symptoms of typical organophosphorus compound toxicity, and inhibition of cholinesterase in the central and peripheral nerve, in the dose in the range of the guidance value of Category 1 (ACGIH (2005), DFGOT vol.13 (1999), PATTY (5th, 2001)). There is the description about the symptoms of phosphororganic compound toxicity as headache, malvolence/vomiting, diarrhea, dizziness, weakness, muscular pain, anxiousness, closeness, salivation, lachrymation, drowsiness in human (ACGIH (2005), PATTY (5th, 2001)). Moreover, there is a description that "stimulating lungs and producing coughing and closeness in the inhalation" at humans (HSFS (2000)). It is classified into Category 1 (nervous systems) and 3 (respiratory irritation) from the above thing.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (nervous system, lung)	Health hazard	Danger	Causes damage to organs (nervous system, lung) through prolonged or repeated exposure	It was classified to as Category 1 (nervous systems) based on that in oral study to rats and dogs, with the dosage of guidance value within the limits of Category 1, cholinesterase inhibition in red corpuscles and/or plasma and relevant symptoms such as the convulsion, tremor, vomiting and diarrhea etc., were observed (ACGIH (2005), DFGOT vol.13 (1999), PATTY (5th, 2001)). Moreover, it was classified to as Category 1 (lungs) based on that in the rat inhalation test with the dosage of guidance value within the limits of Category 1, pulmonary edema and relevant the increase in weight (absolutely weights and relative weights) of the lungs is observed (ACGIH and (2005), DFGOT vol.13 (1999) and PATTY (5th, 2001)).
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 LC50=0.23microg/L of Crustacea (Daphnia magna) (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 was Category 1, supposed not rapidly degrading (BIOWIN), though supposed less bioaccumulative (log Kow=3.99(PHYSPROP Database, 2005)).