GHS Classification

ID157 Thiram

CAS 137-26-8 Date Classified: Aug. 18, 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	–	–	–	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 by regulated examination methods, though it has a flash point and "Flammable" (ICSC (J) (2000))
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	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 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	–	–	–	Containing no oxygen , chlorine and fluorine.
15	Organic peroxides	Not applicable	–	–	–	Containing no -O-O- structure
16	Corrosive to metals	Not classified	–	–	–	It is based on the information (HSDB (2006)) that it has no corrosiveness in the state of dryness.

Health Hazards

Hazard class		Classification	symbol	signal word	hazard statement	Rational for the classification
1	Acute toxicity (oral)	Category 4	Exclamation mark	Warning	Harmful if swallowed	Calculated based on rat LD50 value: 865 to 1300 mg/kg and 780 to 865 mg/kg (EHC 78, 1988), 400 to 4000 mg/kg (ACGIH 7th, 2001), 865mg/kg, and 375 to 1000 mg/kg and 1400 to 5400 mg/kg (IARC 53, 1991). Since the calculated values was 772.2mg/kg, it was set as Category 4.
1	Acute toxicity (dermal)	Not classified	–	–	–	There are the statement that toxicity was not manifested and LD50 value was >2000mg/kg in the 2000mg/kg dermally administered test of rat (EHC 78, 1988, ACGIH 7th, 2001, IARC 53, 1991)Based on this statement, it was set as the 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)	Classification not possible	–	–	–	There is description that rats survived even if they ware exposed to 0.5mg/L and 6.255mg/L for 4 hours (ACGIH (7th, 2001)). But there was no data on the lethal concentration, and category could not be specified. Therefore, it cannot classify since data is insufficient.
2	Skin corrosion / irritation	Category 3	–	Warning	Causes mild skin irritation	From the description that the skin of the rabbit is stimulated very slightly (ACGIH (7th, 2001)), it was classified as Category 3.
3	Serious eye damage / eye irritation	Category 2B	–	Warning	Causes eye irritation	It was set as Category 2B from description that the eye of the rabbit of ACGIH (7th, 2001) is stimulated very slightly.
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 Skin sensitization : Classified as Category 1 because EHC 78 (1988) and DFGOT vol.15 (2001) describe case reports of allergic contact dermatitis, DFGOT vol.15 (2001) describes that the Lympho node test (LLNA method) using mice results positive, and DFG classifies this into a skin sensitization.
5	Germ cell mutagenicity	Category 1B	Health hazard	Danger	May cause genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	The substance was classified as Category 1B. Because there are positive results in the chromosome aberration tests using mouse spermatogenic cells, which are in vivo mutagenicity tests using germ cells (IARC 53, 1991).

6	Carcinogenicity	Not classified	–	–	–	It is classified into a group 3 (IARC 53, 1991) according to IARC and was classified into A4 (ACGIH 7th, 2001) according to ACGIH. So it was set as the outside of Category.
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the undorn child	There is a description that in inhalation exposure or oral administration examination using rats, reduced reproductive potential in male and female were observed with the dose occuring general toxicity (EHC 78 (1988) and IARC 53 (1991)). And although there is no description about general toxicity in parent animals, there is a description that the fetal malformation was observed in the art and mice pregnant administration examination. Therefore, it was classified into Category 2.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system)	Health hazard	Danger	Cause damage to organs (nervous system)	Although there was no report of a specific case, due to the description that the effect on paraesthesia, such as muscle cramp or paraesthesia, is admitted as acute toxicity to the human in EHC 78 (1988). So it was judged that it was not temporary impact corresponding to anesthetic actions, and it was classified into Category 1 (nervous system).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (thyroid gland); Category 2 (nervous system, testes)	Health hazard	Danger	Causes damage to organs (thyroid gland) through prolonged or repeated exposure; May cause damage to organs (nervous system, testes) through prolonged or repeated exposure	Due to the descriptions that many thyroid disorders were observed in the occupational exposure example in IARC 53 (1991), that the effects on the nervous and thyroid system was observed within the guidance value of Category 2 in the oral study using the rats in EHC 78 (1988), ACGIH (7th, 2001), IARC 53 (1991), and IRIS (2006), and that the effect on the testes was observed in the oral study using the rats with the given dose of the guidance value range of Category 2 in ACGIH (7th, 2001), they were classified into Category 1 (thyroid) and Category 2 (nervous system, teste).
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=13.2microg/L of fishes (Fathead minnows) (MOE Risk Assessment No.2, 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, not rapidly degrading (BOD: 2.8% (existing chemical safety inspections data)), though supposed less bioaccumulative (log Kow=1.73(PHYSPROP Database, 2005)).