

GHS Classification

ID91

Ethylene Thiourea

CAS 96-45-7

Date Classified: Jun. 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 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
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	-	-	-	Since the melting point, boiling point, the flash point, etc. are measured at the temperature of 70 degC or more (ICSC (J) (1994) etc.), the ignition point is judged to be 70 degC or more.
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 no oxygen, fluorine and chlorine.
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 4	Exclamation mark	Warning	Harmful if swallowed	Based on rat LD50 = 604.8 mg/kg obtained by applying the calculation formula to LD50 value of the rat 4 examinations (545, 900, 940, and 1832 mg/kg) (DFGOT vol.11 (1998) and CERH Hazard Data (2002)), it was set as Category 4.
1 Acute toxicity (dermal)	Classification not possible	-	-	-	Classification not possible due to lack of 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)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Classification not possible	-	-	-	There is a report of one examination case. But there is no statement on such as the strength of a stimulus. So it cannot be classified because of insufficient data.
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	It was set as Category 2B based on the slight stimulative statement (CERH Hazard Data (2002)).
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Category 1	(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 several patch tests in humans and the Maximization Test using guinea pigs result positive (DFGOT vol.11 (1998)).
5 Germ cell mutagenicity	Not classified	-	-	-	The substance was regarded as outside the categories by the technical guidelines. Because the result of the dominant lethal test using mice is negative (CERH Hazard Data (2002)), and the in vivo mutagenicity tests (several micronucleus tests using mice or rats) are negative as well (IARC 79 (2001)).
6 Carcinogenicity	Not classified	-	-	-	Based on the category of IARC (2001): 3, it was set as the outside of Category.
7 Toxic to reproduction	Category 1B	Health hazard	Danger	May damage fertility or the unborn child	Since there were the increase of resorpted embryo, the reduction of brain weight of embryo and the denaturation of tubule with dose not affecting maternal animal in rabbit organogenetic period administration test (DFGOT vol.11(1998)), and there were malformation of skeletal system, central nerve system and lung, adding to the dose-independent increase of the dead and reduction of weight of embryo with the dose not affecting to maternal animals in hamster (DFGOT vol.11 (1998)), it is classified into the Category 1B. There is the existing classifications of EU Annex 1: Repr.Cat.2;R61.

8	Specific target organs/systemic toxicity following single exposure	Classification not possible	-	-	-	No data available.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (thyroid gland, kidneys); Category 2 (pituitary)	Health hazard	Danger; Warning	Causes damage to organs (thyroid gland, kidneys) through prolonged or repeated exposure; May cause damage to organs (pituitary) through prolonged or repeated exposure	It is stated that the thyroid is the main target organ in mouse and especially rat (DFGOT vol.11 (1998)). Since follicle cell hyperplasia, vacuolation of the thyroid gland, and the quantitative alteration of hormone, and vacuolation of tubular epithelial cells and edema were observed in kidney in rat with the given dose of the Category 1 guidance value range (DFGO vol.11 (1998) CERl hazard data (2002)), they were classified into Category 1 (thyroid gland and kidney). Moreover, since vacuolation of the pituitary was observed with the given dose of the Category 2 guidance value range (DFGOT vol.11 (1998)), it was classified into Category 2 (pituitary).
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 3	-	-	Harmful to aquatic life	It was classified into Category 3 from 48-hour EC50=13.3mg/L of Crustacea (Daphnia magna) (CERl Hazard Data, 2002).
11 Hazardous to the aquatic environment (chronic)	Category 3	-	-	Harmful to aquatic life with long lasting effects	Classified into Category 3, since acute toxicity was Category 3 and not rapidly degrading (BOD: 0% (existing chemical safety inspections data)), though less bio-accumulative (BCF=0.3 (existing chemical safety inspections data)).