

GHS Classification

ID464

CAS 64440-88-6

Physical Hazards

N,N'-ethylenebis(thiocarbamoylthiozinc) bis(N,N-dimethyldithiocarbamate)

Date Classified: Dec. 18, 2006 (Environmental Hazards: Mar. 31, 2006)

Reference Manual: GHS Classification Manual (Feb. 10, 2006)

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Explosives	Not applicable	—	—	—	Containing no chemical groups with explosive properties
2 Flammable gases	Not applicable	—	—	—	Classified as "solid" according to GHS definition
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Not applicable	—	—	—	Classified as "solid" according to GHS definition
5 Gases under pressure	Not applicable	—	—	—	Classified as "solid" according to GHS definition
6 Flammable liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
7 Flammable solids	Classification not possible	—	—	—	Classification not possible due to lack of data
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Classification not possible	—	—	—	Classification not possible due to lack of data
11 Self-heating substances and mixtures	Classification not possible	—	—	—	Classification not possible due to lack of data
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	—	—	—	Stable to water (water solubility: 5.05mg/L (Agricultural Chemical Registration Data))
13 Oxidizing liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
14 Oxidizing solids	Not applicable	—	—	—	Organic compounds containing no oxygen, fluorine or chlorine
15 Organic peroxides	Not applicable	—	—	—	Organic compounds containing no "O-O-" structure
16 Corrosive to metals	Classification not possible	—	—	—	Classification not possible due to lack of data

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 the rat LD50 (oral route) value of 1.761 mg/kg (Agricultural Chemical Registration Data (1993)).
1 Acute toxicity (dermal)	Not classified	—	—	—	Based on the rat LD50 (dermal route) value of >2,000mg/kg, together with the absence of mortality (Agricultural Chemical Registration Data (1993)).
1 Acute toxicity (inhalation: gas)	Not applicable	—	—	—	Due to the fact that the substance is a solid according to the GHS criteria and inhalation of its gas is not expected.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	—	—	—	No data available
1 Acute toxicity (inhalation: dust, mist)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	Based on the rat LC50 (inhalation route) value of 0.104mg/L (4 hours) (Agricultural Chemical Registration Data (1986)).
2 Skin corrosion / irritation	Not classified	—	—	—	Based on the evidence of mild irritation with a Draize score of ca.1.3, which was fully reversed within 7 days, observed in rabbit skin irritation tests (Agricultural Chemical Registration Data (1986)).
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the evidence of severe irritation which persisted for at least 7 days of observation in rabbit eye irritation tests (Agricultural Chemical Registration Data (1986)).
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: No skin sensitizing potential was found in guinea pig sensitization tests employing the Maximization method (Agricultural Chemical Registration Data (1986)).
5 Germ cell mutagenicity	Not classified	—	—	—	Based on negative data in in vitro chromosome aberration tests (Agricultural Chemical Registration Data (1986)), in vivo micronucleus tests on rat bone marrow cells (Agricultural Chemical Registration Data (1996)), though in vitro reverse mutation tests showed positive (Agricultural Chemical Registration Data (1993)).
6 Carcinogenicity	Not classified	—	—	—	There was no treatment-related increase in tumor incidence observed in rat and mouse carcinogenicity studies (Agricultural Chemical Registration Data (1986)). Also due to the fact that the substance is classified as Category 3 by IARC (1987).
7 Toxic to reproduction	Not classified	—	—	—	Based on no evidence of adverse effects on reproduction or offspring development observed in rat reproduction studies and rat/rabbit teratogenicity studies (Agricultural Chemical Registration Data (1988, 1993)).

8	Specific target organs/systemic toxicity following single exposure	Category 2 (central nervous system), Category 3 (respiratory irritation)	Health hazard	Warning	May cause damage to organs (central nervous system) (respiratory irritation) May cause respiratory irritation	In single dose oral toxicity studies in mice, clinical signs including soft feces, reduced locomotor activity and crouching were noted at dose levels within the guidance value ranges for Category 2, whereas in single dose inhalation toxicity studies in rats, clinical signs including abnormal respiratory sounds, lacrimation and inanimation were seen at dose levels within the guidance value ranges for Category 1.
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	—	—	—	There were effects on the blood system, but the exposure doses exceeded the guidance value ranges for Category 2 by a factor of 1.5.
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 hours LC50=0.91mg/L of the fish (Carp) (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	Since acute toxicity was Category 1 and rapidly degrading and bio-accumulation were unknown, it was classified into Category 1.