

## GHS Classification

**ID364**

**CAS 8018-01-7**

### Physical Hazards

## Complex compounds of manganese N,N'-ethylenebis(dithiocarbamate) and zinc N,N'-ethylenebis(dithiocarbamate)

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, though classified as flammable according to ICSC (2003)
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: 6 plus or minus 3ppm, Agricultural Chemical Registration Data)
13 Oxidizing liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
14 Oxidizing solids	Not applicable	—	—	—	Organic compounds containing chlorine, fluorine and oxygen
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 with melting point of >55degC are not available (melting point: thermally decomposes at 190degC (Agricultural Chemical Registration Data)).

### Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Not classified	—	—	—	Based on the rat LD50 (oral route) value of >5,000mg/kg (Agricultural Chemical Registration Data (1993)).
1 Acute toxicity (dermal)	Not classified	—	—	—	Based on the rat LD50 (dermal route) value of >5,000mg/kg (Agricultural Chemical Registration Data (1987)).
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)	Not classified	—	—	—	Based on the absence of mortality at the highest dose of 5.08mg/L in rat inhalation studies (Agricultural Chemical Registration Data (1993)).
2 Skin corrosion / irritation	Not classified	—	—	—	Based on test data from rabbit skin corrosivity studies (Agricultural Chemical Registration Data (1987)): "Erythematous responses were noted immediately after the application, but the affected animals exhibited scores of 0 at 72 hours."
3 Serious eye damage / eye irritation	Category 2B	—	Warning	Causes eye irritation	Based on test data from rabbit eye irritation studies (Agricultural Chemical Registration Data (1993)): "Caused mild irritation of the eye, with effects resolving within 7 days."
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 an allergic skin reaction	Respiratory sensitization: No data available Skin sensitization: Based on positive results in guinea pig skin sensitization studies using the Buehler and Maximization methods (Agricultural Chemical Registration Data (1987, 1993)).
5 Germ cell mutagenicity	Not classified	—	—	—	Based on negative data in in vitro studies (reverse mutation tests, chromosome aberration tests and DNA repair tests) and in vivo studies (mouse micronucleus tests and rat chromosome aberration tests) (Agricultural Chemical Registration Data (1987, 1993)).
6 Carcinogenicity	Not classified	—	—	—	There was no evidence of treatment-related incidence of tumor formation observed in 2-year (rats) and 18-month (mice) carcinogenicity studies (Agricultural Chemical Registration Data (1993)).
7 Toxic to reproduction	Not classified	—	—	—	Based on no evidence of adverse effects on reproduction or offspring development observed in rat 2-generation reproduction studies and rat/rabbit teratogenicity studies (Agricultural Chemical Registration Data (1993)).
8 Specific target organs/systemic toxicity following single exposure	Classification not possible	—	—	—	No symptoms or signs referable to specific target organs were observed at dose levels within the guidance value ranges for Category 2 in the available single dose toxicity studies in rats and mice (Agricultural Chemical Registration Data (1993)).

9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (nervous system, thyroid gland, liver, adrenal)	Health hazard	Warning	May cause damage to organs through prolonged or repeated exposure (nervous system, thyroid gland, liver, adrenal)	Based on the evidence from animal studies including vacuolization/phagocytosis of myelin sheath, Schwann cell proliferation, increased thyroid weights, proliferation of follicular epithelium of the thyroid gland, hepatocellular hypertrophy, hypertrophy of basophilic cells of anterior lobe of hypophysis, and hypertrophy of adrenal cortical glomerulosa cells (Agricultural Chemical Registration Data (1993, 2004)). These effects were observed at dosing levels within the guidance value ranges for Category 2.
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 hours EC50=0.073mg/L of the crustacea (Daphnia magna) (Agricultural Chemical Registration Data, 2004).
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Although acute toxicity is Category 1 and bio-accumulation is low (log Kow=1.33(PHYSPROP Database, 2005)), since there was no rapidly degrading (BIOWIN), it was classified into Category 1.