GHS Classification

ID506 N-methyldithiocarbamic acid

CAS 144-54-7 Date Classified: Dec. 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	−	−	−	Containing no chemical groups with explosive properties
2	Flammable gases	Not applicable (ammonium salt)	−	−	−	Classified as "solid" according to GHS definition. The free acid cannot be classified due to lack of data.
3	Flammable aerosols	Not applicable	−	−	−	Not aerosol products
4	Oxidizing gases	Not applicable (ammonium salt)	−	−	−	Classified as "solid" according to GHS definition. The free acid cannot be classified due to lack of data.
5	Gases under pressure	Not applicable (ammonium salt)	−	−	−	Classified as "solid" according to GHS definition. The free acid cannot be classified due to lack of data.
6	Flammable liquids	Not applicable (ammonium salt)	−	−	−	Classified as "solid" according to GHS definition. The free acid cannot be classified due to lack of data.
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 (ammonium salt)	−	−	−	Classified as "solid" according to GHS definition. The free acid cannot be classified due to lack of data.
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 applicable	−	−	−	Containing no metals or metalloids (B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At)
13	Oxidizing liquids	Not applicable (ammonium salt)	−	−	−	Classified as "solid" according to GHS definition. The free acid cannot be classified due to lack of data.
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 706mg/kg (Agricultural Chemical Registration Data (1984)).
1	Acute toxicity (dermal)	Classification not possible	−	−	−	Classification cannot be determined, though the available rat dermal study reported the LD50 value of >628mg/kg (Agricultural Chemical Registration Data (1984)).
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:	Classification not possible	−	−	−	No data available
1	Acute toxicity (inhalation: dust, mist)	Category 4	Exclamation mark	Warning	Harmful if inhaled	Based on the rat LC50 (inhalation route) value of 1.98mg/L (4 hours) (Agricultural Chemical Registration Data (1984)).
2	Skin corrosion / irritation	Category 1C	Corrosion	Danger	Causes severe skin burns and eye damage	Based on the evidence of destruction of skin tissues observed in rabbit skin irritation tests (24 hour application) (Agricultural Chemical Registration Data (1987)).
3	Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Due to the fact that rabbit skin corrosivity potential is classified as Category 1C.
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 tests employing the Maximization method (Agricultural Chemical Registration Data (1984)).
5	Germ cell mutagenicity	Not classified	−	−	−	Based on negative data in in vitro reverse mutation tests (Agricultural Chemical Registration Data (1979)), in vivo micronucleus tests on mouse bone marrow cells and in vivo unscheduled DNA synthesis tests on rat stem cells (Agricultural Chemical Registration Data (2002)), though in vitro chromosome aberration tests showed positive (Agricultural Chemical Registration Data (1993)).
6	Carcinogenicity	Not classified	−	−	−	There was no treatment-related increase in tumor incidence observed in carcinogenicity studies in rats and mice (Agricultural Chemical Registration Data (1996)).

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 (1993, 1995, 1996)).
8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system)	Health hazard	Danger	Causes damage to organs (nervous system)	Based on the evidence from animal studies including "reduced locomotor activity," "salivation," "prone position," and "tonic convulsions" (Agricultural Chemical Registration Data (1984)). These effects were observed at dosing levels within the guidance value ranges for Category 1.
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (liver)	Health hazard	Warning	May cause damage to organs through prolonged or repeated exposure (liver)	In the available animal studies, "increased liver weight and centrilobular hepatocellular hypertrophy" were found. 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 72 hours EbC50=0.062mg/L of the algae (Green Algae) (Agricultural Chemical Registration Data, 2005).
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=1.15(Existing Chemical Safety Inspections Data,)), since there was no rapidly degrading (the decomposition by BOD: 6%(Existing Chemical Safety Inspections Data)), it was classified into Category 1.