

GHS Classification

ID278

CAS 950-37-8

Physical Hazards

S-(2,3-Dihydro-5-methoxy-2-oxo-1,3,4-thiadiazol-3-yl)methyl O,O-dimethyl phosphorodithioate; Methidathion; DMTP

Date Classified: Nov. 20, 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	—	—	—	No data available
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	Not classified	—	—	—	Considered non-pyrophoric when in contact with air at ordinary temperatures since the substance is stable to heat (up to 150degC) (Agricultural Chemical Registration Data (2003))
11 Self-heating substances and mixtures	Not classified	—	—	—	Stable to heat (up to 150degC) (Agricultural Chemical Registration Data (2003))
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	—	—	—	Stable to water (water solubility: 200mg/L (25degC), Agricultural Chemical Registration Data (2003))
13 Oxidizing liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
14 Oxidizing solids	Classification not possible	—	—	—	Classification not possible due to lack of data, though being organic compounds containing oxygen (but not chlorine and fluorine) bound to the elements other than carbon and hydrogen
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 on the substances with melting points of <55degC (melting point: 40.0-40.9degC, Agricultural Chemical Registration Data (2003)).

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 2	Skull and crossbones	Danger	Fatal if swallowed	Based on the LD50 values of 40mg/kg and 48mg/kg reported in the two oral studies with rats (Agricultural Chemical Registration Data (1987)).
1 Acute toxicity (dermal)	Not classified	—	—	—	Based on the absence of mortality at the highest dose of 4,000mg/kg observed in the dermal studies with rats (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 definition and inhalation of its gas is not expected.
1 Acute toxicity (inhalation: dust, mist)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	Based on the rat LC50 (inhalation exposure) value of 0.109mg/L representing the lower of the two testing data, 0.109mg/L and 0.173mg/L (Agricultural Chemical Registration Data, 1993).
2 Skin corrosion / irritation	Not classified	—	—	—	Based on the evidence of only mild irritation (mean Draize score of 1.2), with effects fully clearing after 72 hours, observed in rabbit skin irritation studies (Agricultural Chemical Registration Data (1987)), that suggests little potential for skin irritation.
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye damage	Based on the description in the report on rabbit eye irritation tests (Agricultural Chemical Registration Data (1987)): "The affected animals exhibited a Draize score of 3 or greater and were not fully recovered on day 7."
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: Based on no evidence of sensitization in guinea pig sensitization studies (Agricultural Chemical Registration Data (1987)).
5 Germ cell mutagenicity	Not classified	—	—	—	Based on negative data on in vitro reverse mutation tests (Agricultural Chemical Registration Data (1987)), in vitro chromosome aberration tests (Agricultural Chemical Registration Data (1990)) and in vivo micronucleus tests (Agricultural Chemical Registration Data (1987)).
6 Carcinogenicity	Not classified	—	—	—	There was no treatment-related evidence of tumor incidence observed in carcinogenicity studies in rats and mice, reported in Agricultural Chemical Registration Data (1987). Also due to the fact that the substance is classified as Category C by EPA (1993).
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the evidence of reduced mating frequency and reduced pup viability at doses producing adverse effects on parental animals observed in rat 2-generation reproduction studies (Agricultural Chemical Registration Data (1987)).
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: in rat acute oral studies, clinical signs and symptoms including reduced motor activity, generalized convulsions, salivation and tremors were found. In mouse acute oral studies, symptoms including reduced motor activity, generalized convulsions, salivation, staggering and vomiting were noted (Agricultural Chemical Registration Data (1987)). 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 1 (liver)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (liver)	Based on the evidence from animal studies including increased liver enzyme activity and intrahepatic cholestasis (Agricultural Chemical Registration Data (1992)). These effects were observed at dosing levels within the guidance value ranges for Category 1.
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=1.1microg/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=2.2(PHYSROP Database, 2005)), since there was no rapidly degrading (BIOWIN), it was classified into Category 1.