GHS Classification

ID295 O,O-Diethyl O-5-phenyl-3-isoxazolyl phosphorothioate; Isoxathion

CAS 18854-01-8 Date Classified: Nov. 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	Classification not possible	–	–	–	Classification not possible due to lack of data on the decomposition energy, though being 1,2-oxazols containing chemical groups with explosive properties. The substance has the oxygen budget calculated at -153, and decomposes at 160degC (HSDB (2006))
2	Flammable gases	Not applicable	–	–	–	Classified as "liquid" according to GHS definition
3	Flammable aerosols	Not applicable	–	–	–	Not aerosol products
4	Oxidizing gases	Not applicable	–	–	–	Classified as "liquid" according to GHS definition
5	Gases under pressure	Not applicable	–	–	–	Classified as "liquid" according to GHS definition
6	Flammable liquids	Not classified	–	–	–	The flash point is 179degC (Agricultural Chemical Registration Data).
7	Flammable solids	Not applicable	–	–	–	Classified as "liquid" according to GHS definition
8	Self-reactive substances and mixtures	Not applicable	–	–	–	Containing no chemical groups with explosive or self-reactive properties
9	Pyrophoric liquids	Classification not possible	–	–	–	No data available
10	Pyrophoric solids	Not applicable	–	–	–	Classified as "liquid" according to GHS definition
11	Self-heating substances and mixtures	Classification not possible	–	–	–	Test methods applicable to liquid substances are not available (test temperature: 140degC).
12	Substances and mixtures, which in contact with water, emit flammable gases	Not classified	–	–	–	Stable to water (water solubility: 1.9ppm (25degC) (Agricultural Chemical Registration Data))
13	Oxidizing liquids	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
14	Oxidizing solids	Not applicable	–	–	–	Classified as "liquid" according to GHS definition
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 3	Skull and crossbones	Danger	Toxic if swallowed	Based on the rat LD50 (oral route) value of 180mg/L (Agricultural Chemical Registration Data (1992)).
1	Acute toxicity (dermal)	Not classified	–	–	–	Based on the absence of mortality at the highest dose of 2,000mg/kg observed in rat acute toxicity studies using the dermal route of exposure (Agricultural Chemical Registration Data (1985)).
1	Acute toxicity (inhalation: gas)	Not applicable	–	–	–	Due to the fact that the substance is a liquid according to the GHS definition and inhalation of its gas is not expected.
1	Acute toxicity (inhalation: vapour)	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 2.0mg/L (Agricultural Chemical Registration Data (1985)).
2	Skin corrosion / irritation	Category 3	–	Warning	Causes mild skin irritation	Based on the description in the report on rabbit skin irritation tests (Agricultural Chemical Registration Data (1985)): "The substance is slightly irritating with effects resolving after 3 days" (though the Draize score is not presented).
3	Serious eye damage / eye irritation	Category 2B	–	Warning	Causes eye irritation	Based on the description in the report on rabbit eye irritation tests (Agricultural Chemical Registration Data (1985)): Caused mild conjunctival inflammation which cleared up after 3-4 days.
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 skin sensitization observed in guinea pig skin sensitization tests using the Maximization method (Agricultural Chemical Registration Data (1986)).
5	Germ cell mutagenicity	Not classified	–	–	–	Based on negative data on in vitro reverse mutagenicity tests, in vitro chromosome aberration tests and in vivo micronucleus tests on mouse bone marrow cells (Agricultural Chemical Registration Data (1985)).
6	Carcinogenicity	Not classified	–	–	–	There was no treatment-related evidence of tumor incidence observed in 18-month carcinogenicity studies in mice, reported in Agricultural Chemical Registration Data (1990).
7	Toxic to reproduction	Not classified	–	–	–	Based on no evidence of adverse effects observed in rat 3-generation reproductive toxicity studies and rabbit teratogenicity studies, reported in Agricultural Chemical Registration Data (1985)).
8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system, pancreas)	Health hazard	Danger	Causes damage to organs (nervous system, pancreas)	In rat single dose toxicity studies, clinical signs and symptoms including sedation, salivation, nasal secretion, incontinence, tremors and hypopnea, reduced body weight gains, atrophy and dark-brown pigmentation of the pancreas were reported (Agricultural Chemical Registration Data (1992)). These effects were observed at dosing levels within the guidance value ranges for Category 1.
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	–	–	–	Some studies in humans and animals provide evidence of cholinesterase inhibition (Agricultural Chemical Registration Data (1985)). However, classification is not possible because no other common symptoms and pathological findings are available (Agricultural Chemical Registration Data (1985)).
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=0.11microg/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	Although acute toxicity is Category 1 and bio-accumulation is low (log Kow=3.73(PHYSPROP Database, 2005)), since there was no rapidly degrading (BIOWIN), it was classified into Category 1.