

GHS Classification

ID281

CAS 52-68-6

Physical Hazards

Dimethyl 2,2,2-trichloro-1-hydroxyethylphosphonate; Trichlorfon; DEP

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	Not classified	—	—	—	Classified as flammable according to ICSG (2004). Classified into Division 6.1 (UN#2783 Organophosphorous Pesticide, solid, toxic (ICSG (2004) (UN Recommendation on the Transport of Dangerous Goods).
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	—	—	—	Classified into Division 6.1 (UN#2783 Organophosphorous Pesticide, solid, toxic (ICSG (2004) (UN Recommendation on the Transport of Dangerous Goods).
11 Self-heating substances and mixtures	Not classified	—	—	—	Classified into Division 6.1 (UN#2783 Organophosphorous Pesticide, solid, toxic (ICSG (2004) (UN Recommendation on the Transport of Dangerous Goods).
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	—	—	—	Stable to water (water solubility: 120g/L (20degC), Agricultural Chemical Registration Data)
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	—	—	—	Test methods applicable to solid substances with melting point of >55degC are not available (melting point: 77-81 degC, Agricultural Chemical Registration 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 253mg/kg (Agricultural Chemical Registration Data (1998)).
1 Acute toxicity (dermal)	Not classified	—	—	—	Based on the rat LD50 (dermal route) value of >=5,000mg/kg, together with the absence of mortality (Agricultural Chemical Registration Data
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)	Classification not possible	—	—	—	No data available
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	—	—	—	Classification not possible because there is no evidence of death at the highest dose of 2.3mg/kg in rat inhalation exposure studies, and the acute toxicity value cannot be determined (Agricultural Chemical Registration Data (1997)).
2 Skin corrosion / irritation	Not classified	—	—	—	Based on no evidence of skin irritation reported in more than one skin irritation studies with rabbits (Agricultural Chemical Registration Data (1986, 1987)).
3 Serious eye damage / eye irritation	Category 2B	—	Warning	Causes eye irritation	In the available rabbit eye irritation studies, 3 test animals exhibited a score of 2 (conjunctival redness noticed at 24 hours), but the reactions fully cleared up on day 7 (Agricultural Chemical Registration Data (1987)).
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 the report on guinea pig Maximization tests (Agricultural Chemical Registration Data (1987)); "skin sensitization: positive."
5 Germ cell mutagenicity	Not classified	—	—	—	Based on negative data on in vivo mouse micronucleus tests and in vivo mouse dominant lethal tests, though in vitro reverse mutation tests and in vitro chromosome aberration tests showed positive (Agricultural Chemical Registration Data (1987)).
6 Carcinogenicity	Not classified	—	—	—	There was no treatment-related increase in tumor incidence observed in mouse and rat carcinogenicity studies, reported in Agricultural Chemical Registration Data (1988, 1989). Also due to the fact that the substance is classified as Group 3 by IARC (1987) and Group A4 by ACGIH (2001).
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the evidence of reduced neonatal body weight, reduced female fertility index, reduced number of litters, and delayed ossification in the pups at doses producing reduced body weight gains in parental animals observed in rat 3-generation reproduction studies and rat/rabbit teratogenicity studies (Agricultural Chemical Registration Data (1987)). Since it cannot be clearly demonstrated that these findings are secondary to parental toxicity, the substance is classified into Category 2.
8 Specific target organs/systemic toxicity following single exposure	Category 2 (nervous system)	Health hazard	Warning	May cause damage to organs (nervous system)	In rat single dose toxicity studies, clinical signs and symptoms including reduced motor activity, tremors, salivation and lacrimation were reported (Agricultural Chemical Registration Data (1987)). These effects were observed at dosing levels within the guidance value ranges for Category 2.

9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	—	—	—	In rat repeated dose toxicity studies, cholinesterase inhibition was observed at dosing levels within the guidance value ranges for Category 2. However, classification is not possible because no evidence of other common symptoms or pathological findings was available (Agricultural Chemical Registration Data (1956)).
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=0.36microg/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=0.51(PHYSROP Database, 2005)), since there was no rapidly degrading (BIOWIN), it was classified into Category 1.