

## GHS Classification

**ID76**

**Dimethyl 2,2-dichlorovinyl phosphite; Dichlorvos**

**CAS 62-73-7**

Date Classified: Aug. 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	-	-	-	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 177degC (open cup flash test) (NFPA (13th, 2002))
7 Flammable solids	Not classified	-	-	-	Classified as "flammable" by ICSC (2004). Classified into Division 6.1 (UN#3018 (Organophosphorous Pesticide, liquid, toxic) (ICSC, 2004)) (UN Recommendations on the Transport of Dangerous Goods)
8 Self-reactive substances and mixtures	Not classified	-	-	-	No data available, though containing unsaturated bonds. Classified into Division 6.1 (UN#3018 (Organophosphorous Pesticide, liquid, toxic) (ICSC, 2004)) (UN Recommendations on the Transport of Dangerous Goods)
9 Pyrophoric liquids	Not classified	-	-	-	Classified into Division 6.1 (UN#3018 (Organophosphorous Pesticide, liquid, toxic) (ICSC,2004)) (UN Recommendations on the Transport of Dangerous Goods)
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.
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Stable to water (water solubility: 10,000mg/L (20degC), HSDB (2006))
13 Oxidizing liquids	Not classified	-	-	-	No data available, though being organic compounds containing oxygen bound to elements other than carbon and hydrogen. Classified into Division 6.1 UN Recommendations on the Transport of Dangerous Goods (UN#3018 (Organophosphorous Pesticide, liquid, toxic) (ICSC,2004)).
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	Not classified	-	-	-	Classified into Division 6.1 (UN#3018 (Organophosphorous Pesticide, liquid, toxic) (ICSC, 2004)) (UN Recommendations on the Transport of Dangerous Goods)

## 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 LD50 (oral route) value of 56mg/kg in the acute toxicity study with rats (Agricultural Chemical Registration Data (2003)).
1 Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	Based on LD50 (dermal route) value of 75mg/kg in the acute toxicity study with rats (Agricultural Chemical Registration Data (2003)).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Due to the fact that the substance is "liquid" according to the GHS definition and inhalation of its gas is not expected.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	Classification not possible due to lack of data on acute toxicity by vapour exposure.
1 Acute toxicity (inhalation: dust, mist)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	Because the LC50 values of 50.3ppm, 38ppm, 72ppm, 57.9ppm and 49.4ppm, calculated respectively from the testing data of rat LC50 (1 hour) of 0.455mg/L (EHC 79 (1988)), LC50 (4 hours) of 0.34mg/L (EHC 79 (1988)), 0.65mg/L (EHC 79 (1988)), 0.523mg/L and 0.447mg/L (PATTY (4th, 1999)), exceeded the saturated vapour concentration (20.9ppm) under a saturated vapour pressure of 0.0158mmHg (25degC; equivalent to 2.11Pa), the substance was considered as "mist exposure" and was classified based on the LC50 of 0.266mg/kg (4-hour inhalation of dust/mist).
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 (2003)): The substance produced mild reversible irritation of the skin.
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 (2003)): The substance induced corneal and conjunctival irritation. The reactions resolved on day 5.
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: Skin sensitization studies (Maximization Tests) in guinea pigs gave positive results (Agricultural Chemical Registration Data (2003)).
5 Germ cell mutagenicity	Not classified	-	-	-	Based on negative data on multi-generation mutagenicity tests (dominant lethal tests), germ cell mutagenicity tests in vivo (chromosome aberration tests) and somatic cell mutagenicity tests in vivo (micronucleus tests, chromosome aberration tests), described in NTP DB (Access on Apr., 2006), IARC 53 (1991), ATSDR (1997), DFGOT Vol.4 (1992) and CERL-NITE Hazard Assessment No.86 (2005). Moreover, Agricultural Chemical Registration Data (2003) report on the substance giving negative data on in vitro chromosome aberration tests.
6 Carcinogenicity	Not classified	-	-	-	There was no increase in tumor incidence in carcinogenicity studies in rats using oral and inhalation routes of exposure (Agricultural Chemical Registration Data (2003)). Also due to the fact that the substance is classified as Category A4 by ACGIH (2001).
7 Toxic to reproduction	Not classified	-	-	-	Based on no evidence of adverse effects on parental reproduction and pup development up to doses producing parental toxicity, described in Agricultural Chemical Registration Data (2003), IARC 53 (1991), EHC 79 (1988), ATSDR (1997) and CERL-NITE Hazard Assessment No.86 (2005).
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 report of single dose studies in rats and mice (Agricultural Chemical Registration Data (2003)): exophthalmos, excessive lacrimation, salivation, generalized myofasciculation and tremor were observed. 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 (nervous system, liver)	Health hazard	Warning	Causes damage to organs through prolonged or repeated exposure (nervous)	In animal studies with rats and dogs, effects on nervous system caused by cholinesterase inhibition, diffuse vacuolar degeneration, fatty degeneration and swelling of hepatocyte and mild bile stasis were reported (Technical Reports for Agricultural Chemical Registration (2003)). These effects were observed within the guidance values for Category 2 in the repeated-dose study. Based on these data, the substance was classified as Category 2 (nervous system, liver).
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 96 hours LC50=0.000019mg/L of the crustacea (Mysid Shrimp)) (CERI/NITE Hazard Assessment Report, 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=1.47(PHYSROP Database, 2005)), since there was no rapidly degrading (BIOWIN), it was classified into Category 1.