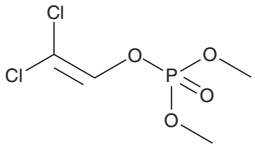
PRODUCT INFORMATION

Dichlorvos

Item No. 23727

CAS Registry No.:	62-73-7
Formal Name:	phosphoric acid, 2,2-dichloroethenyl dimethyl ester
Synonyms:	DDVP, Dichlorovinyl Dimethyl Phosphate, NSC 6738
MF:	$C_4H_7Cl_2O_4P$
FW:	221.0
Purity:	≥98%
Supplied as:	A neat oil
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Dichlorvos is supplied as a neat oil. A stock solution may be made by dissolving the dichlorvos in the solvent of choice. Dichlorvos is soluble in organic solvents such as methanol, chloroform, and ethyl acetate, which should be purged with an inert gas. Dichlorvos is also soluble in water. We do not recommend storing the aqueous solution for more than one day.

Description

Dichlorvos is an organophosphate insecticide and inhibitor of acetylcholinesterase (AChE) and butyrylcholinesterase (BChE; IC_{50}s = 269 and 44 nM, respectively).[1] It also binds to the M_2 muscarinic receptor in rat heart homogenates.[2] Dichlorvos is lethal to 4-week old German cockroach (*B. germanica*) nymphs (LD_{50} = 0.108 µg per insect) and silkworms (*B. mori*) in third instar (LC_{50} = 6.63 mg/L) after 24 hours.[3,4] It is lethal to zebrafish (*D. rerio*) embryos (LC_{50} = 39.75 mg/L after 24 hours) and decreases swimming activity of larvae 6 days after fertilization when administered at a concentration of 25 mg/L in tank water.[5] Dichlorvos (150 ppm for 80 weeks) also increases the incidence of benign and malignant neoplasms in male rats from 47 to 88% as compared to controls.[6] Formulations containing dichlorvos have been used as insecticides and miticides in agriculture, as well as in aquatic, commercial, industrial, and residential areas.

References

1. Petroianu, G.A., Schmitt, A., Arafat, K., *et al.* Weak inhibitors protect cholinesterases from stronger inhibitors (dichlorvos): In vitro effect of tiapride. *Int. J. Toxicol.* **24(2)**, 79-86 (2005).
2. Silveira, C.L., Eldefrawi, A.T., and Eldefrawi, M.E. Putative M_2 muscarinic receptors of rat heart have high affinity for organophosphorus anticholinesterases. *Toxicol. Appl. Pharmacol.* **103(3)**, 474-481 (1990).
3. Qian, K., Wei, X., Zeng, X., *et al.* Stage-dependent tolerance of the German cockroach, *Blattella germanica* for dichlorvos and propoxu. *J. Insect Sci.* **10(1)**, 201 (2010).
4. Zhang, Z.-Y., Wang, D.-L., Chi, Z.-J., *et al.* Acute toxicity of organophosphorus and pyrethroid insecticides to *Bombyx mori*. *J. Econ. Entomol.* **101(2)**, 360-364 (2008).
5. Şişman, T. Dichlorvos-induced developmental toxicity in zebrafish. *Toxicol. Ind. Health* **26(9)**, 567-573 (2010).
6. Reuber, M.D. Carcinogenicity of dichlorvos. *Clin. Toxicol.* **18(1)**, 47-84 (1981).

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