

Product Data Sheet

Product Name: Dichlorvos-d6

Cat. No.: GC49293

Chemical Properties

Cas. No. 203645-53-8

SMILES Cl/C(Cl)=C\OP(OC([2H])([2H])[2H])(OC([2H])([2H])[2H])=O

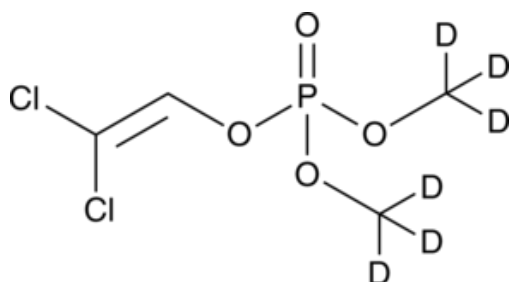
Formula C4HCl2D6O4P M.Wt 227

Solubility Methanol: soluble Storage -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Background

Dichlorvos-d₆ is intended for use as an internal standard for the quantification of dichlorvos by GC- or LC-MS. Dichlorvos is an organophosphate insecticide and inhibitor of acetylcholinesterase (AChE) and butyrylcholinesterase (BChE; IC₅₀s = 269 and 44 nM, respectively).¹ It also binds to the M₂ muscarinic receptor in rat heart homogenates.² Dichlorvos is lethal to 4-week old German cockroach (*B. germanica*) nymphs (LD₅₀ = 0.108 µg per insect) and silkworms (*B. mori*) in third instar (LC₅₀ = 6.63 mg/L) after 24 hours.^{3,4} It is lethal to zebrafish (*D. rerio*) embryos (LC₅₀ = 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

Caution: Product has not been fully validated for medical applications. For research use only.

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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 M2 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. Si?man, 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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