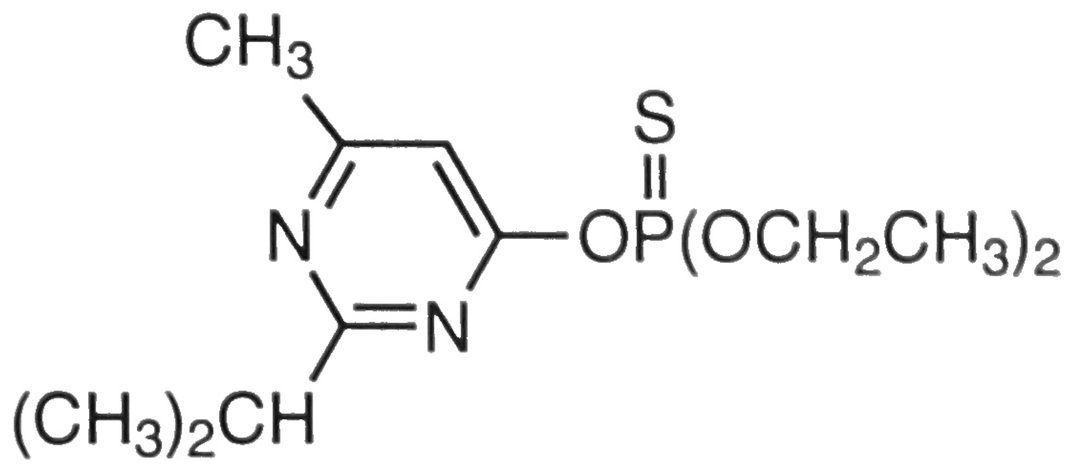
organophosphorus



NOMENCLATURE

Common name diazinon (BSI, E-ISO, (*m*) F-ISO, ANSI, ESA, BAN, JMAF), *dimpylate* (former BAN name).
IUPAC name *O,O*-diethyl *O*-2-isopropyl-6-methylpyrimidin-4-yl phosphorothioate.
C.A. name *O,O*-diethyl *O*-[6-methyl-2-(1-methylethyl)-4-pyrimidinyl] phosphorothioate.
CAS RN *[333-41-5]* **Development code** G 24 480 **Official code** OMS 469; ENT 19 507.

PHYSICO-CHEMICAL PROPERTIES

Composition Tech. is 95% pure.
Mol. wt. 304.3 **Mol. formula** $C_{12}H_{21}N_2O_3PS$
Form Clear colourless oil; (tech., yellow oil). **B.p.** 83-84 °C/0.0002 mmHg; 125 °C/1 mmHg **V.p.** 1.2×10^{-2} Pa (25 °C) (OECD 104) **SG/density** 1.116-1.118 (20 °C)
K_{ow} logP = 3.30 (OECD 107) **Solubility** In water 60 mg/l (20 °C). Completely miscible with common organic solvents, e.g. ethers, alcohols, benzene, toluene, hexane, cyclohexane, dichloromethane, acetone, petroleum oils. **Stability** Susceptible to oxidation above 100 °C. Stable in neutral media, but slowly hydrolysed in alkaline media, and more rapidly in acidic media; DT_{50} (20 °C) 11.77 h (pH 3.1), 185 d (pH 7.4), 6.0 d (pH 10.4). Decomposes above 120 °C.

COMMERCIALISATION

History Insecticide reported by R. Gasser (*Z. Naturforsch. Teil B,* 1953, **8,** 225). Introduced by J. R. Geigy S.A. (now Ciba-Geigy AG). **Patents** BE 510817; GB 713278
Manufacturer All-India Medical; Atochem; Ciba-Geigy; Drexel; Elf Atochem; Makhteshim-Agan; Nippon Kayaku.

APPLICATIONS

Mode of action Non-systemic insecticide and acaricide with contact, stomach, and respiratory action. Cholinesterase inhibitor. **Uses** Control of sucking and chewing insects and mites on a very wide range of crops, including deciduous fruit trees, citrus fruit, vines, olives, bananas, pineapples, vegetables, potatoes, beet, sugar cane, coffee, cocoa, tea, tobacco, maize, sorghum, alfalfa, flax, cotton, rice, ornamentals, glasshouse crops, forestry, etc.; soil insects (by soil application); phorid and sciarid flies in mushroom cultivation; flies, lice, mites, fleas, cockroaches, bedbugs, ants, and other insect pests in animal houses and household use. Seed treatment for maize, for control of frit flies and also conferring bird-repellent properties. Also used as a veterinary ectoparasiticide.
Phytotoxicity Non-phytotoxic when used as directed. Russetting may occur on green and