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FORMATION OF A TRICYCLIC PHOSPHORANE IN THE REACTION OF DIETHYLAMINO-(2-ACETYLPHENYL)-PHENYLPHOSPHONITE WITH ACETIC ACID

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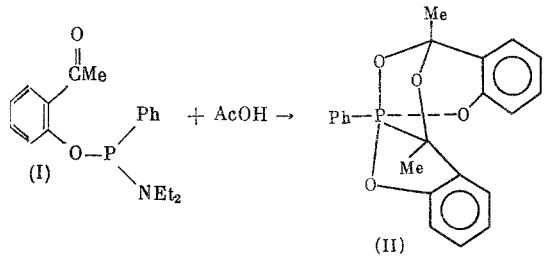
Depending on the reaction conditions, the acidolysis of open-chain amidophosphites gives either acyl phosphites or hydrophosphoryl compounds [1]. We have discovered an unusual example of acidolysis leading to a tricyclic compound with a pentacoordinated phosphorus atom. Thus, the reaction of 15.45 g (0.05 mole) diethylamino-(2-acetylphenyl)phenylphosphonite (I) with 3.25 g (0.05 mole) acetic acid at 20°C gave 6.8 g (73%) 3,4:8,9-dibenzo-5,7-dimethyl-1-phenyl-2,6,10,11-tetraoxa-1-phospha(V)tricyclo[5.3.1.$0^{1,5}$]undecane (II) [2] with mp 178-180°C (from ethyl acetate), $\delta^{31}P$ ($CHCl_3$) −7 ppm



PMR spectrum (CCl_4, δ, ppm): 1.58 d (CH_3CP, $^3J_{HP}$ = 20 Hz), 1.97 s (CH_3COP), 6.53-7.59 m ($2C_6H_4 + C_6H_5$). Found: C 69.55; H 4.94; P 8.68%. Calculated for $C_{22}H_{19}O_4P$: C 69.84; H 5.03; P 8.20%. The melting point and PMR spectrum of (II) corresponded to those for the compound obtained by convergent synthesis from $PhPCl_2$ and 2-acetylphenol in the presence of base [2].

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