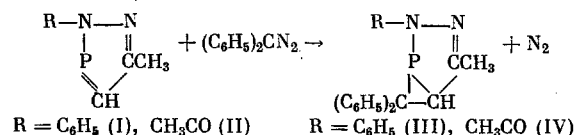


CYCLOADDITION REACTIONS TO 4-METHYL-2-PHENYL- AND 2-ACETYL-4-METHYLDIAZAPHOSPHOLES WITH THE PARTICIPATION OF DIPHENYLDIAZOMETHANE

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Using as examples 4-methyl-2-phenyl- and 2-acetyl-4-methyldiazaphospholes ([1] and [2], respectively) and diphenyldiazomethane we have shown for the first time the possibility of cycloaddition at a P=C bond of a doubly-coordinated phosphorus atom



The structures of (III) and (IV) were shown by elementary analyses, ¹H and ³¹P NMR spectra, and IR spectra.

(III), mp 135-136°C (from C₂H₅OH), R_f 0.35 (C₆H₆), δ₃₁P (CH₂Cl₂) 80 ppm. PMR spectrum (CCl₄, δ, ppm): 2.181 (3 H, CH₃), 3.84 (1H, ²J_{PH} = 20 Hz), 7.00 (15 H, 3 C₆H₅). IR spectrum (ν, cm⁻¹): 3065, 3030 w, 1595, 1500 s, 770 m, 755 s, 721 m, 705 s (C₆H₅); 1575 m (C=N); band at 1300 v.s. absent (pulsation vibrations of a diazaphosphole ring). Found: C 77.30; H 5.71; N 8.10; P 9.01%. C₂₂H₁₉N₂P. Calculated: C 77.16; H 5.59; N 8.18; P 9.05%.

(IV), mp 140-146°C, R_f 0.45 (acetone), δ₃₁P (CH₂Cl₂) 93 ppm. PMR spectrum (CCl₄, δ, ppm): 1.865 (3 H, CH₃CO), 2.115 (3H, CH₃); 3.59 (1 H, ²J_{PH} = 20 Hz), 7.126 (10 H, 2 C₆H₅). IR spectrum (ν, cm⁻¹): 3060, 3025 w, 1605, 1490, 770, 725 m, 710 s (C₆H₅); 1665, 1650 s (C=O); 1575 w (C=N); no band at 1280 v.s. Found: C 70.06; H 5.56; N 8.69; P 9.85%. C₁₈H₁₇N₂PO. Calculated: C 70.11; H 5.55; N 9.08; P 10.05%.

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