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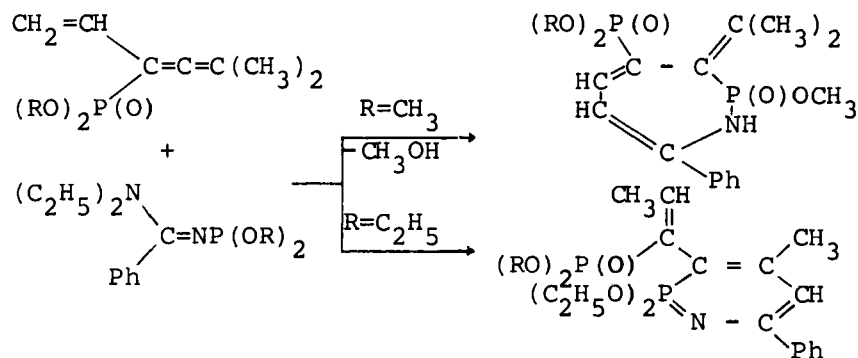
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PHOSPHORYLATED ALLENES IN THE CYCLOADDITION REACTIONS

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The reactions of phosphorus-containing allenes with the derivatives of phosphorus of low coordination are investigated. The interaction of the 1-vinyl-1-phosphoryloxy-3,3-dimethylallene with (dimethylaminomethylidene)phenylphosphine was shown to occur over 1,3-diene system according to Diels-Alder reaction. The formation of the six-membered heterocycle was accompanied by changing the coordination of the phosphorus atom from P^{II} to P^{III} . The reaction of the phosphorus containing 1,3-dipole (diethylaminobenzylidene)-aminodimethoxyphosphine with 1-vinyl-1-phosphoryloxy-3,3-dimethylallene was found to give the seven-membered azaphosphepin. The changing of methoxy-radicals by ethoxy-groups in benzylideneaminophosphine leads to azaphosphorins as products. The formation of the seven-membered adduct in this case is small. The two-step mechanism of these reactions with the initial attack of atom P^{III} at central carbon atom of allene is in agreement with kinetic, thermochemical and ^{31}P -NMR data.



The 1,3-dipolar cycloaddition of the C,N-diphenylnitrone to the allenylphosphonate is accompanied by further rearrangement of the initially formed adduct.