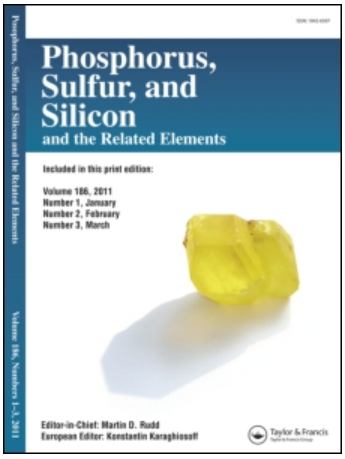


Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

Synthesis of Heterocycles Based on α,β-Unsaturated P(III) Derivatives

Yu. G. Trishin[a]; V. N. Chistokletov[a]; A. A. Petrov[a]
[a] Leningrad Technological Institute for the Pulp and Paper Industry, Ivan, Chernykh, USSR

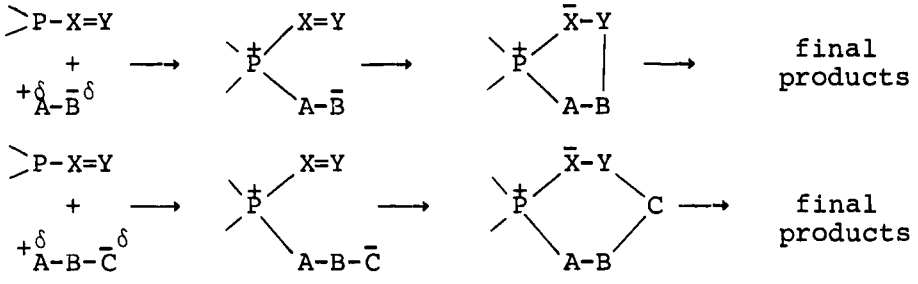
To cite this Article Trishin, Yu. G. , Chistokletov, V. N. and Petrov, A. A.(1990) 'Synthesis of Heterocycles Based on α,β-Unsaturated P(III) Derivatives', Phosphorus, Sulfur, and Silicon and the Related Elements, 51: 1, 278
To link to this Article: DOI: 10.1080/10426509008040812
URL: http://dx.doi.org/10.1080/10426509008040812

Phosphorus, Sulfur, and Silicon, 1990, Vols. 51/52, p. 278
Reprints available directly from the publisher
Photocopying permitted by license only

SYNTHESIS OF HETEROCYCLES BASED ON α,β-UNSATURATED P(III) DERIVATIVES

Yu.G.TRISHIN, V.N.CHISTOKLETOV, and A.A.PETROV
Leningrad Technological Institute for the Pulp and Paper Industry, 193092 Leningrad, Ivan Chernykh 4, USSR

A general method of phosphorus heterocycle synthesis has been developed. It is based on the interaction between α,β-ethylene, acetylene P(III) derivatives and reagents, which contain electrophilic and nucleophilic centres in α,β- and α,γ-positions, e.g. compounds with activated multiple bonds; β-halogenalcanols and thiols; nitrilimines, nitrilylides as 1,3-dipoles. This process is an unsynchronic ionic cycloaddition which begins with the attack of a phosphorus atom to the electrophilic centre of a reagent.



The formation of phosphorus heterocycles is defined by the possibility of formation of unstable cyclic ylids, and by the conditions which promote their transformation into stable final products. The most important regularities of those processes are stated. A tendency of α,β-unsaturated derivatives to form heterocycles depends on the nature of multiple bond and changes in the line N=C>C≡C>C=C.