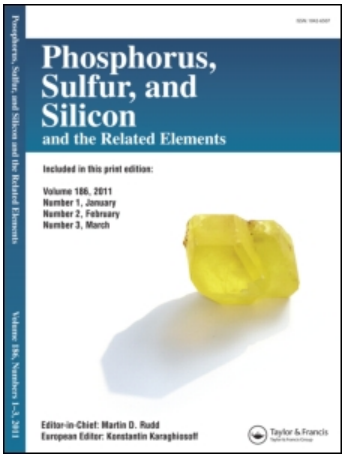

Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

The Influence of the Substituents Steric Effect on the Acidic Properties of Dialkylphosphorus Acids and on their Reactivity in the Pudovik Reaction

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To cite this Article Cherkasov, R. A. , Galkin, V. I. and Ucharova, A. B.(1987) 'The Influence of the Substituents Steric Effect on the Acidic Properties of Dialkylphosphorus Acids and on their Reactivity in the Pudovik Reaction', Phosphorus, Sulfur, and Silicon and the Related Elements, 30: 3, 662
To link to this Article: DOI: 10.1080/03086648708079156
URL: http://dx.doi.org/10.1080/03086648708079156

The Influence of the Substituents Steric Effect on the Acidic Properties of Dialkylphosphorus Acids and on their Reactivity in the Pudovik Reaction

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Kinetics and mechanism of the Pudovik reaction on example of dialkylphosphites catalyzed addition to α,β-unsaturated carbonyl compounds (benzalacetone, benzalacetophenone and dibenzalacetone) have been studied by the method of spectrophotometry in solution of n-propanol and n-butanol. The united scheme of interaction has been suggested.

On the basis of kinetic investigations acidic properties of some dialkylphosphorous acids have been determined with the help of NMR - ^{31}P method. The data obtained are in a good agreement with each other and permit to dismember the rate constant observed into elementary contributions.

On the basis of the previously suggested steric model (V.Galkin and R.Cherkasov, Organic Reactivity, 1981, p.113-150) the steric constants of substituents at phosphorus have been calculated.

By the method of correlation analysis it is shown that the acidic properties and reactivity of dialkylphosphites in these reactions are controled by the steric effect of substituents at phosphorus.