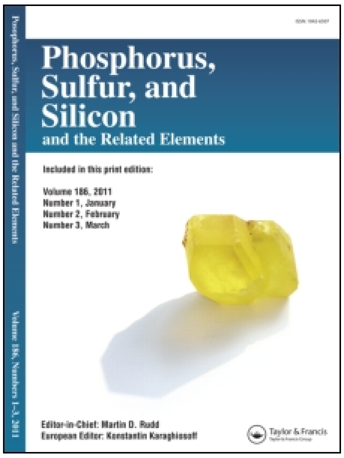


Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

The Influence of the Structure of Phosphorus Acids Esters on their Reactivity in Aqueous and Nonaqueous Micellar Solutions

Ludmila Kudryavtseva[a]; Raisa Shagidullina[a]; Lutsiya Zakharova[a]; Elena Zhiltsova[a]; Vladimir Al'fonsov[a]
[a] A.E. Arbuzov Institute of Organic and Physical Chemistry, Kazan Scientific Center of the Russian Academy of Sciences, Kazan, Russian Federation

To cite this Article Kudryavtseva, Ludmila , Shagidullina, Raisa , Zakharova, Lutsiya , Zhiltsova, Elena and Al'fonsov, Vladimir(1999) 'The Influence of the Structure of Phosphorus Acids Esters on their Reactivity in Aqueous and Nonaqueous Micellar Solutions', Phosphorus, Sulfur, and Silicon and the Related Elements, 147: 1, 43

To link to this Article: DOI: 10.1080/10426509908053502

URL: http://dx.doi.org/10.1080/10426509908053502

Phosphorus, Sulfur and Silicon, 1999, Vol. 147, pp. 43-43
Reprints available directly from the publisher
Photocopying permitted by license only

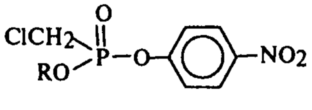
Published by license under the
Gordon and Breach Science Publishers imprint.
Printed in Malaysia

The Influence of the Structure of Phosphorus Acids Esters on their Reactivity in Aqueous and Nonaqueous Micellar Solutions

LUDMILA KUDRYAVTSEVA, RAISA SHAGIDULLINA,
LUTSIYA ZAKHAROVA, ELENA ZHILTSOVA and
VLADIMIR AL'FONSOV

A.E. Arbuzov Institute of Organic and Physical Chemistry, Kazan Scientific Center of the Russian Academy of Sciences, 8 ul. Akad. Arbuzova, 420088 Kazan, Russian Federation

The kinetics of the basic hydrolysis of O-alkyl-O-p-nitrophenyl-chloromethylphosphonate in aqueous micellar solutions of cetylpyridinium bromide (CPB) and the aminolysis of these substrates by n-hexylamine in the reverse micelles of polyethylene glycole-600-monolaurate (PM) in toluene has been studied.



R= n-C_2H_5 (**1**), n-C_4H_9 (**2**), n-C_6H_{13} (**3**), n-C_8H_{17} (**4**)

The substrate specificity in the hydrolysis is revealed. An increase in the CPB catalytic effect in the series **1**< **2**<**3** was observed. The 100-fold acceleration of the reaction in the micelles was found for **3**. The observed rate constant of the aminolysis increases by a factor of 10 in the nonionic micelles. Unlike the CPB micelles the catalytic activity of the PM micelles little differs over the series of the substrates. The largest micellar rate effect is observed for the ethoxy substrate. The kinetic data are treated in terms of the pseudo-phase model of micellar catalysis.