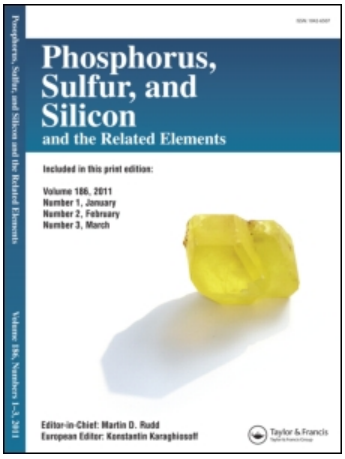

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Synthetic Use of Dialkyl Phosphite/Carbon Tetrachloride Mixture in Inter-and Intramolecular Dehydrating Reactions

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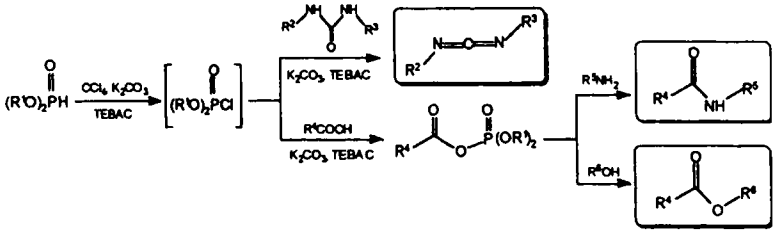
Dialkyl phosphoryl chlorides generated "in situ" from dialkyl phosphites and CCl_4 on the surface of solid K_2CO_3 in the presence of a PT catalyst can be used for activation of carboxylic acids via mixed anhydride formation and also for activation of ureas by the formation of *O*-phosphoryl isourea derivatives. In further reaction of the intermediates result in formation of amides and esters by the reaction of amine or alcohols, or in case of urea the derivative carbodiimide forming spontaneously by heat.



In both processes the formation of tetraalkyl pyrophosphate was observed, the formation of which can also be explained by a multistep two phase reaction of phosphate ester anion on the surface of the K_2CO_3. The pyrophosphate is also consumed for acylation both with the carboxylate anion and the urea.

These reaction offer a convenient one pot method for the synthesis of carboxamides, esters and carbodiimides.

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