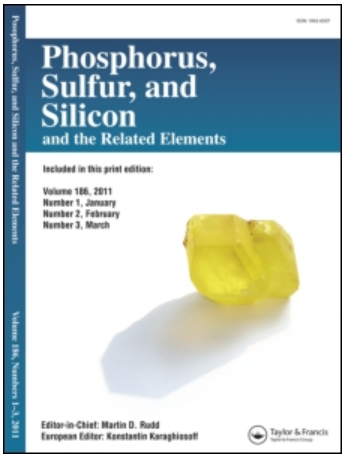

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Synthesis, Structure and Properties of C(X)NHP(Y) Fragment Containing Compounds

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SYNTHESIS, STRUCTURE AND PROPERTIES OF C(X)NHP(Y) FRAGMENT CONTAINING COMPOUNDS

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Abstract N-(thio)carbonyl(thio)amidophosphate, their open-chain and crown-containing analogues with a C(X)NHP(Y) fragments are associated with intermolecular hydrogen bonds as C=X...H-N and P=Y...H-N or intramolecular hydrogen bonds of N-H...O(macrocycle).These compounds easily enter into alkylation reaction,are added according to C=N bonds of activated imines, take part in O→S and S→O exchanging reactions.

The object of the present work is to give exhaustive information on synthesis, structure and properties of N-(thio)-carbonyl(thio)amidophosphates (1), their open-chain (2) and crown-containing analogues (3) with a C(X)NHP(Y) fragments:

$$RC(X)NHP(Y)(OR^1)_2 \quad (1)$$

$$(R^1O)_2P(Y)NHC(X)NH\text{-}R^2\text{-}NHC(X)NHP(Y)(OR^1)_2 \quad (2,3)$$

where R=Alk,Ar; R^1=Alk ; R^2=$(CH_2)_7$, $(CH_2)_2O(CH_2)_2O(CH_2)_2$, $(CH_2)_2O(CH_2)_2$, DA-15-CR-5, DA-18-CR-6; X,Y=O,S.

The reactions of phosphorylation of (thio)amides and acylation of (thio)amidophosphates in the "superbasic medium" are the most effective factors for synthesis the compounds (1). The compounds (2,3) were obtained by means of an addition reaction of diaminopodands and diazacrown-ethers to phosphoryliso(thio)cyanates. The compounds (1) are associated with intermolecular hydrogen bonds as C=X...H-N and P=Y...H-N, while the compounds (3) form intramolecular hydrogen bonds of N-H...O(macrocycle). The compounds (1) easily enter into alkylation reaction. They are added according to C=N bonds of activated imines. They are oxidated and take part in O→S and S→O exchanging reactions. Prototropic transformations as C(S)NH ⇄ C(SH)=N and P(Y)NH ⇄ P(YH)=N have been detected in compounds (1,3).