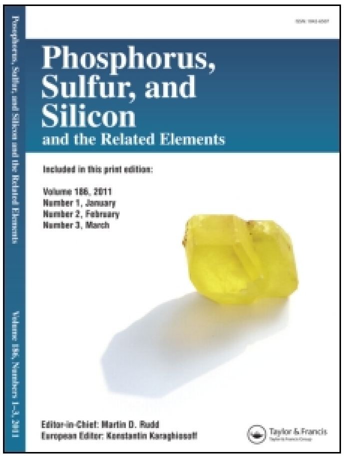

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Reactions of Azides of Sugars with Derivatives of Tri-Valent Phosphorus Leading to N-Phosphorylated Sugars

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REACTIONS OF AZIDES OF SUGARS WITH DERIVATIVES OF TRIVALENT PHOSPHORUS LEADING TO N-PHOSPHORYLATED SUGARS

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This communication deals with a simple method for preparation of N-phosphorylated sugars by the reaction of trivalent phosphorus derivatives with 1-α,β-azides of 2,3,4,6-tetraacetylated and 2,3,4,6-tetra(trimethyl)silylated glycose. It has been established that phosphimine derivatives, obtained as a result of the Staudinger reaction, can be easily hydrolyzed to give derivatives of acetylated glucosaminphosphoric acids. It has been discovered that susceptibility to hydrolysis depends on the phosphorus substituents. When using esters of trivalent phosphorus the rate of hydrolysis for compounds with alkyl substituents decreases in order

$$C_3H_7 > C_2H_5O >> CH_3O$$

This can probably be explained by the electronic and steric influence of the alkyl groups.

The interaction of above mentioned azides with hexaethyltriamidophosphite results in stable phosphazide derivates confirmed by the NMR- and IR-spectroscopy data, and by elemental analysis.

^1H, ^{31}P NMR-spectroscopy showed that when the reaction product of β-azides of tetraacetylated glucose with diethylenimide of ethylphosphorous acid was hydrolyzed, an intermediate compound with a phosphorane structure was produced, which then disintegrated with the splitting of the P-N-bond and with elimination of the ethylenimine group.