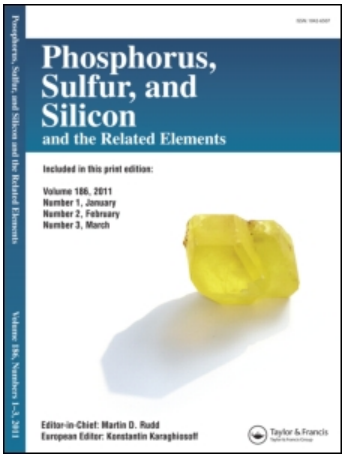

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Reaction of Benzyltrimethylammonium Phenylenedioxy Tetrachlorophosphorate with Phenylacetylene and Propargyl Chloride

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REACTION OF BENZYLTRIMETHYLAMMONIUM PHENYLENEDIOXY TETRACHLOROPHOSPHORATE WITH PHENYLACETYLENE AND PROPARGYL CHLORIDE

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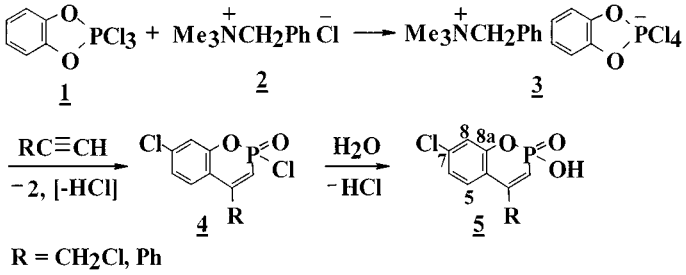
The interaction of phenylenedioxytrichlorophosphorane **1** with benzyltrimethylammonium chloride **2** gives the hexacoordinated derivative **3** (δ_P −97 ppm), which easily reacts (20°C, CH_2Cl_2) with phenylacetylene or propargylchloride and leads to the preferable formation (70–80%) of the substituted 2,7-dichloro-4-R-2-oxobenzo[*e*]-1,2-oxaphosphorines **4**. The selective chlorination of the benzo-substituent *meta* to endocyclic oxygen of the phosphorine heterocycle takes place. As it has been shown earlier,[1] the reaction of phosphorane **1** with PhC≡CH without salt **2** yields 2,6-dichloro-2-oxo-4-phenylbenzo[*e*]-1,2-oxaphosphorine, and the reaction with propargyl chloride yields 2,8-dichloro-2-oxo-4-chloromethylbenzo-[*e*]-1,2-oxaphosphorine. The structure of 2-chloro- and 2-hydroxy-derivatives **4**, **5** was confirmed by ^1H, ^{13}C,



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^{31}P NMR. The location of the chlorine atom in seventh position was established on the basis of multiplicity of the C^5, C^8, C^{8a} signals in ^{13}C NMR spectra.

REFERENCE

[1] V. F. Mironov, A. I. Konovalov, I. A. Litvinov, A. T. Gubaidullin, R. R. Petrov, A. A. Shtyrlina, T. A. Zyablikova, N. M. Azancheev, R. Z. Musin, and A. V. Il'yasov, *Zh. Obshch. Khim.* **68,** 1482 (1998).