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## Phosphorus, Sulfur, and Silicon and the Related Elements

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## Synthesis and Properties of 2-Phosphaadamantane

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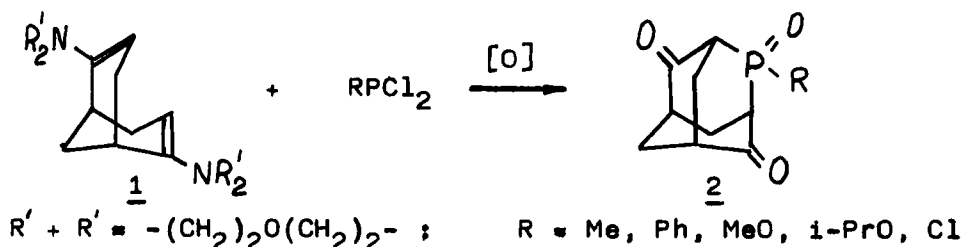
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## SYNTHESIS AND PROPERTIES OF 2-PHOSPHAADAMANTANE

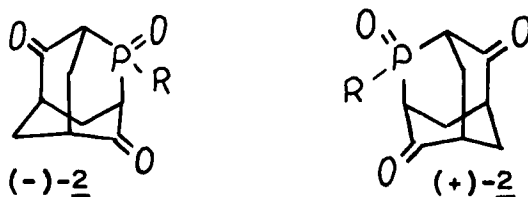
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The derivatives of 2-phosphaadamantane were obtained by the reaction of dienamine 1 with  $RPCl_2$  compounds (1):



The course of this reaction was studied by NMR. Structure of compounds 2 was confirmed by means of X-Ray diffraction. The reactions of these compounds were investigated. The chemical properties of compounds 2 were found to be strongly dependent on the nature of adamantane skeleton. All attempts to obtain the phosphinyl-substituted carb-anions from compounds 2 have failed.

By the title reaction we have developed a convenient method for the synthesis of the optically active 2-phosphaadamantane derivatives 2:



$(-)-(1R)$ -2-phosphaadamantanes 2 of high enantiomeric purity have been prepared using baker yeast as a chiral reagent.

(1) V.N.Zemlianov, A.M.Alexandrov, V.P.Kukhar, Zh.Obshch. Khim. 55, 2667 (1985).