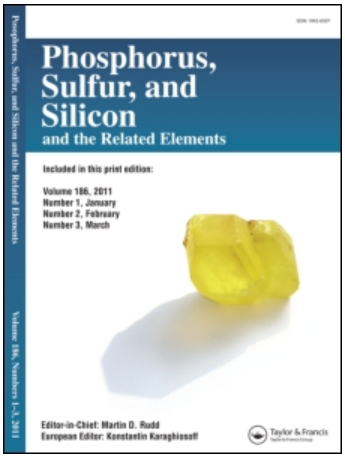

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Synthesis and Properties of 2-Phosphaadamantane

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SYNTHESIS AND PROPERTIES OF 2-PHOSPHAADAMANTANE

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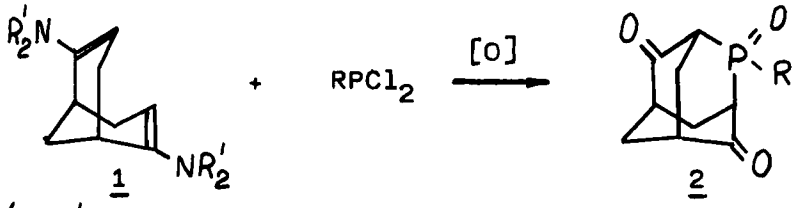
The derivatives of 2-phosphaadamantane were obtained by the reaction of dienamine 1 with $RPCl_2$ compounds (1):

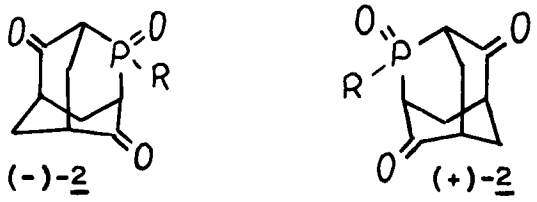


1 + $RPCl_2$ —[O]→ 2

$R' + R' = -(CH_2)_2O(CH_2)_2-$; R = Me, Ph, MeO, i-PrO, Cl

The course of this reaction was studied by NMR. Structure of compounds 2 was confirmed by means of X-Ray difraction. 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 obtaine 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-phospha--adamantane derivatives 2:



(-)-2 (+)-2

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

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