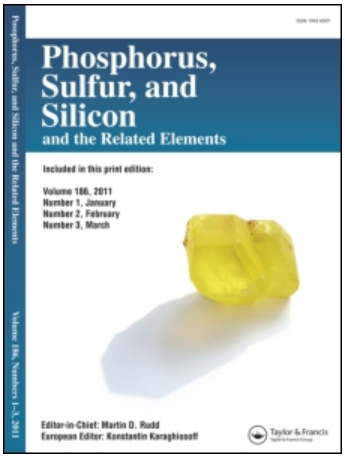

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Tris(Trimethylsilyl)Phosphine in Reaction with Bis(Phenylenedioxa)Chlorophosphorane. The Way to Phosphoranylphosphines

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[a] A.E. Arbuzov Institute of Organic and Physical Chemistry, Kazan, Russia [b] Kazan State University, Kazan, Russia

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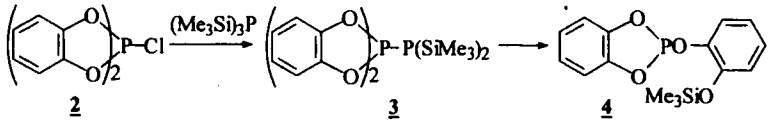
Tris(Trimethylsilyl)Phosphine in Reaction with Bis(Phenylenedioxa)Chlorophosphorane. The Way to Phosphoranylphosphines

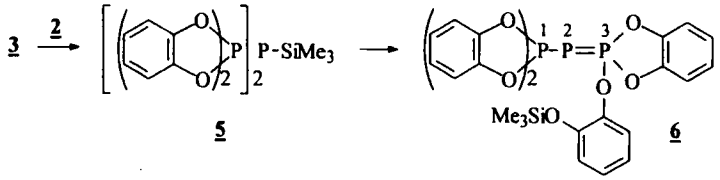
ELENA V. POPOVA[a], VLADIMIR F. MIRONOV[a], YULIYA M. VOLODINA[b], NAIL M. AZANCHEEV[a], ELEONORA A. ISHMAEVA[b] and IGOR I. PATSANOVSKY[b]

[a]*A.E. Arbuzov Institute of Organic and Physical Chemistry, Kazan, 420088, Russia and* [b]*Kazan State University, Kazan, 420008, Russia*

Tris(trimethylsilyl)phosphine (1) is the key reagent in the synthesis of one- and two-coordinated phosphorus compounds. Its characteristic features are extreme reactivity, high nucleophility of phosphorus atom and the P-Si bonds lability. The interaction of phosphine (1) with bis(catechol)chlorophosphorane (2) has been studied by dynamic ^{31}P NMR method. On the reagents ratio 1:1 at first the nucleophilic substitution of chlorine occurs leading to formation of phosphorane (3) with P^{III}-P^{V} bond ($\delta_{P(III)}$ -117.0, $\delta_{P(V)}$ 17.4 ppm, $^{1}J_{PP}$ 305.0 Hz) which converts then into more stable 2-(trimethylsiloxyphenyloxy)-4,5-benzo-1,3,2-dioxaphospholane (4).



2 3 4



5 6

Under chlorophosphorane (2) excess the triphosphenic structure (6) is formed *via* intermediate diphosphorane (5) in a small extent. Three multiplets have been assigned to compound (6) in ^{31}P NMR spectrum [δ_{P1} 18.8 ppm (d.d), $^{1}J_{P1P2}$ 471.1 Hz, $^{2}J_{P1PP3}$ 16.8 Hz; δ_{P2} -157.0 ppm (d.d), $^{1}J_{P2P3}$ 767.0 Hz, $^{1}J_{P2P1}$ 471.1 Hz; δ_{P3} 101.5 ppm (d.d), $^{1}J_{P3P2}$ 767.0 Hz, $^{2}J_{P3PP1}$ 16.8 Hz].

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