THE PERFLUOROPINACOLYL GROUP, A STABILIZING SUBSTITUENT FOR UNUSUAL PHOSPHINES AND PHOSPHORANES

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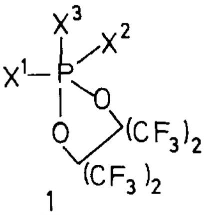
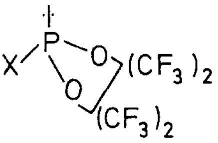
The perfluoropinacolyl group (=PFP) stabilises halogenophosphoranes of the type 1 e.g.



1



2

$X^1=X^2=X^3=F,Cl,Br$ or $X^1=X^2=Cl,Br$, $X^3=F$, covalent species which are able to react with Li_2PFP to form spirocyclic systems [1]. Precursors of compounds 1 are the phosphites 2 (X=F,Cl,Br). The aminophosphite with $X=NH_2$ shows interesting behaviour towards hexafluoroacetone forming a spiro system containg a four and a five membered ring. Phosphites with $X=NR^1R^2$ add readily chlorine to give stable chlorophosphoranes. Products of the ammonolysis of the trifluorophosphoranes ($X^1=X^2=X^3=F$) were the aminophosphoranes $(H_2N)_nPF_{3-n}(PFP)$ (n=1, 2,3) in good yields. Dynamic processes of the latter compounds were discussed on the bases of low temperatur ^{19}F n.m.r. spectroscopy.

1 G.-V. Röschenthaler, J.A. Gibson, K. Sauerbrey, and R. Schmutzler, Z. anorg. allg. Chem. 450 (1979)

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