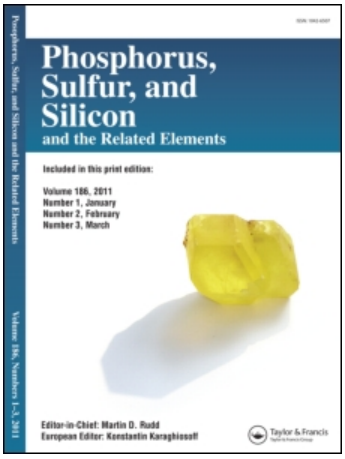

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Trialkylsilyl Substituted Phosphanides of Yttrium

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TRIALKYLSILYL SUBSTITUTED PHOSPHANIDES OF YTTRIUM

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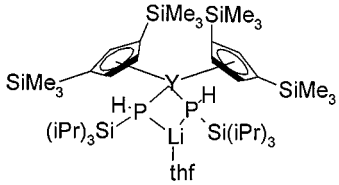
The phosphanides of yttrium are extremely moisture- and air-sensitive. The metalation of $HP(SiMe_3)_2$ with trialkylyttrium in benzene yields homoleptic dimeric $Y[P(SiMe_3)_2]_3$ (**1**).[1] Compound **1** is soluble in hydrocarbons. However, ethers are cleaved within a few hours. The synthesis of heteroleptic yttrium phosphanides succeeds if the reactive Y—P bond is shielded by demanding groups.[2] Therefore, the metathesis reaction of $Cp_2Y(\mu\text{-}Cl)_2Li(thf)_2$ [Cp = 1,3-$(Me_3Si)_2C_5H_3$] with two equivalents of a primary phosphanide $MP(H)SiR_3$ gives yellow $Cp_2Y[P(H)SiR_3]_2M(L)$ (R = *i*Pr; **2**, M = Li; **3,** M = K) with Y—P distances of approximately 284 pm. An equimolar reaction leads to the coordination of a solvent molecule and to the formation of $Cp_2Y(thf)P(H)SiR_3$ (**4**; R = *t*Bu) with a Y—P bond length of 278 pm.[3] The crystals of **4** decompose slowly even in an argon atmosphere.



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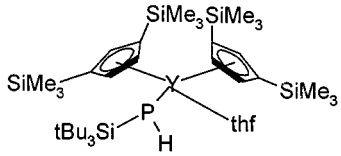

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SCHEME 1

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