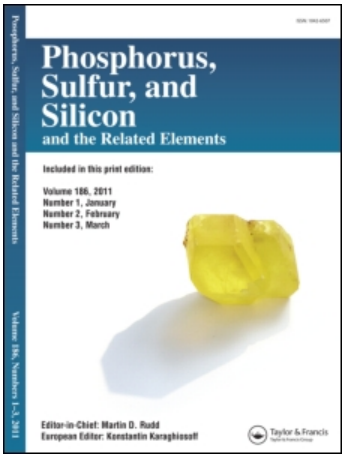

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A Convenient Preparation of Symmetric and Asymmetric Trifluoromethylphosphines

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A CONVENIENT PREPARATION OF SYMMETRIC AND ASYMMETRIC TRIFLUOROMETHYLPHOSPHINES

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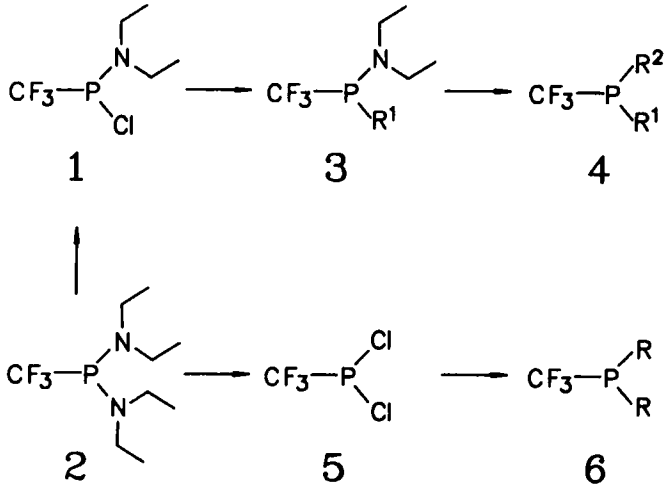
Chloro(diethylamino)trifluoromethylphosphine (**1**), easily prepared from **2** by the method of W. Volbach and I. Ruppert [1], reacts with Grignard compounds to yield **3**; the latter can be converted by HCl into the corresponding chloroderivatives, which upon repeated treatment with Grignard reagent yield symmetric and asymmetric trifluoromethylphosphines **4**.

The aforementioned bis(diethylamino)trifluoromethylphosphine (**2**) serves also as starting material for the synthesis of symmetrically substituted trifluoromethylphosphines **6**: reaction of **2** with HCl gives dichloro(trifluoromethyl)phosphine (**5**), from which the symmetrically substituted trifluoromethylphosphines **6** are obtained by reaction with two equivalents of organometallic reagents.



[1] W. Volbach and I. Ruppert, Tetrahedron Lett. 1983, 24, 5509.