Preparative and nuclear magnetic resonance studies of 1,3,2,4-diazadiphosphetidines. IV. Methyl- and methoxyfluorodiazadiphosphetidines. Harris, Robin K.; Wazeer, Mohamed I. M.; Schlak, Ottfried; Schmutzler, Reinhard. Sch. Chem. Sci., Univ. East Anglia, Norwich, UK. Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999) (1974), (17), 1912-21.

Abstract

Diazadiphosphetidines I (R = Me, MeO; m = 3, n = 2, m = n = 1, 2; m = 2, n = 1) were prepd. by substitution of fluorinated analogs by MeMgI, MeLi, or LiOMe. 1H-decoupled 19F and 31P NMR were analyzed using subspectral techniques and iterative computer fitting. The concerted pseudorotation nature of the axial .dblarw. equatorial exchange permitted the exchange to be slowed on the NMR timescale at low temps. in only 2 cases. Chem. shift and coupling const. (J) values were influenced by the substituents and geometry. Values of 2JPP were pos. and could be reproduced by a product of parameters characteristic of the environment of each P nucleus.