

Preparative and nuclear magnetic resonance studies of diazadiphosphetidines. VI. 2,4-dialkyl-2,2,4,4-tetrafluoro-1,3-dimethyl-1,3,2,4-diazadiphosphetidines. 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) (1976), (1), 17-23.

Abstract

Proton-decoupled ^{19}F and ^{31}P NMR spectra of the dialkyltetrafluorodiazadiphosphetidines $(\text{RF}_2\text{PNMe})_2$ (I; R = Me, Et, CHMe₂, CMe₃) were analyzed at temps. high enough for gauche .dplarw. trans exchange to be rapid on the NMR timescale, and at low temps. when the exchange is slow. Some PMR data are given, including a complete anal. of the spectrum of I (R = Me) on an $[\text{A}(\text{X})_2\text{M}_3]_2$ basis. Many signs of coupling consts. were detd. either from the anal. or from double-resonance expts. There is a very large isomer effect on $2J_{\text{pp}}$, especially for I (R = CMe₃). Isomer populations were obtained by several methods. I (R = CHMe₂) was prepd. from the reaction of MeN(SiMe₃)₂ with Me₂HCPF₄, which was prepd. from Me₂HCPCl₂ and SbF₃. I (R = CMe₃) was prepd. from $(\text{F}_3\text{PNMe})_2$ and Me₃CLi; this reaction often commences only after an induction period and may be violent.