

**Preparative and structural studies of diazadiphosphetidines. Part 9. X-ray and nuclear magnetic resonance investigations of (Ph<sub>2</sub>FPNMe)<sub>2</sub>.** Harris, Robin K.; Wazeer, Mohamed I. M.; Schlak, Ottfried; Schmutzler, Reinhard; Sheldrick, William S. Sch. Chem. Sci., Univ. East Anglia, Norwich, UK. Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999) (1977), (6), 517-22.

### Abstract

The reaction of Ph<sub>2</sub>PF<sub>3</sub> with MeN(SiMe<sub>3</sub>)<sub>2</sub> gives the dimer (Ph<sub>2</sub>FPNMe)<sub>2</sub> (I) contg. a diazodiphosphetidine ring. I was studied by NMR spectroscopy and x-ray diffraction. The <sup>1</sup>H NMR spectrum of the NMe group may be explained in terms of a slow pseudorotation between 2 conformations. The 2 values of <sup>3</sup>J<sub>PH</sub> (16.78, 6.17 Hz) involve coupling paths through axial and equatorial P-N bonds. Triclinic crystals of I contain 2 independent crystallog. centrosym. mols. within the unit cell. The coordination at P is distorted trigonal-bipyramidal, with mean bond lengths P-F 1.683, P-N (equatorial) 1.652, P-N (axial) 1.780, and P-C 1.835 Å.

