coordinated of the Sb atom is distorted octahedral or 4'-octahedral. 2SbCl₄·3(4-phenylpyridine): a = 11.301(15), b = 11.630(16), c = 8.194(5) Å, α = 107.54(8)°, P2₁/c, Z = 2. The crystal structure of this complex has been determined by means of X-ray crystallographic methods. The results of this complex differs significantly from 2SbCl₄·biphenyl (Liptk a & Mootz, Z. anorg. allg. Chem. (1978) 440, 217), where the independent SbCl₄ molecules are differently arranged to the phenyl rings, which are not co-planar but display a dihedral angle of 40.5°.

09.4-51 THE LOW TEMPERATURE NEUTRON DIFFRACTION STUDY OF [Nh₄(PPHP₄)₂]. By David Gregson, Judith A. K. Howard, John L. Spencer, David Turner, Department of Inorganic Chemistry, The University, Bristol BS8 1TS, England, and Sax Mason, Institute Laue Langevin, Grenoble, France.

Hydrogenolysis of hexamethyl tungsten in the presence of (PPh₄)₂ gives the title compound. The structure of these nine co-ordinate species had been a matter of conjecture, until this definitive study was carried out. The molecular symmetry is approximately D₃h, rather than D₃, with two of the phosphine ligands occupying prism vertices rather than the equatorial capping positions of the trigonal prism.

The results of the low temperature neutron experiment are summarised in the Figure (schematic representation).

Full details will be presented, and compared with the low temperature X-ray diffraction study.

Data were collected at the Institut Laue Langadin, Grenoble, the facilities of which are gratefully acknowledged.


The crystal structure of the title compound [Pr(DMA)₃(H₂O)₆] (F₃cso₃) has been determined by X-ray diffraction methods and refined anisotropically to an R-factor of 9%. This is part of a series of studies on the coordination of lanthanide adducts and their optical properties (Castellano and Becker, Acta Cryst. (1981), in press). 3299 independent reflections with intensities above background were measured. Space group is P2₁, and unit cell parameters are a = 18.432(1), b = 24.534(1), c = 11.444(1) Å, β = 103.6(1)°, with Z = 2. The cation is coordinated to nine oxygen atoms located at the vertices of a tricapped trigonal prism with approximate symmetry D₃h. Six oxygen atoms from equal number of water molecules are located at the vertices of the trigonal prism and three oxygen atoms from DNA groups are at the capping positions. The trifluoromethane sulphonate anions are not coordinated to the cation and are somewhat disordered. The fluorescence spectrum data obtained from the compound doped with Eu³⁺, shows selection rules approximately consistent with the ones expected for point group D₃h on pure symmetry grounds.

Work supported by FAPESP, CNpq and BID-FINEP.