

# Synthesis, IR and X-Ray Studies of Tetra(N,N'-tetraethyl-N''-benzoyl-phosphorictriamide)-tetra( $\mu$ -3-methoxo)-tetra(methanol)tetra-Nickel(II)

Vladimir A. Ovchynnikov<sup>a</sup>, Vladimir M. Amirkhanov<sup>a</sup>, Anatoliy A. Kapshuk<sup>a</sup>,  
Tatyana Yu. Sliva<sup>a</sup>, Tadeusz Glowiak<sup>b</sup>, Henryk Kozłowski<sup>b</sup>

<sup>a</sup> Department of Inorganic Chemistry, Kiev University,  
Vladimirskaya St. 64, Kiev 252033, Ukraine

<sup>b</sup> Faculty of Chemistry, University of Wrocław, F. Joliot-Curie 14, 50-383 Wrocław, Poland

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A new nickel(II) complex with N,N'-tetraethyl-N''-benzoylphosphortriamide (HL = C<sub>6</sub>H<sub>5</sub>C(O)N(H)P(O)(NEt<sub>2</sub>)<sub>2</sub>) of composition Ni<sub>4</sub>L<sub>4</sub>(OCH<sub>3</sub>)<sub>4</sub>·(HOCH<sub>3</sub>)<sub>4</sub> (**1**) has been synthesized. The crystal and molecular structure of **1** has been determined from the X-Ray diffraction data (tetragonal, space group P $\bar{4}$ 2<sub>1</sub>c with  $a = 17.000(2)$  Å,  $c = 15.338(3)$  Å,  $Z = 2$ ;  $R = 0.0399$  for 1412 unique reflections). The structure is made up of cubane-like tetramers. In the corners of a cube there are 4 atoms of nickel and 4 atoms of oxygen of methoxy groups. The nickel atoms are characterized by a slightly distorted octahedral environment, which consists of three oxygen atoms of methoxy groups, carbonylic and phosphorylic oxygen atoms of the ligand L<sup>-</sup>, and an oxygen atom of a methanol molecule. The ligands L<sup>-</sup> coordinate to the metal ion forming a chelate *via* the oxygen atoms of carbonylic and phosphorylic groups.

\* Reprint requests to Dr. V. M. Amirkhanov.