

β -Diketonates and their Analogs: Stabilization of the Dimeric $M_2\{L\}_4(D)_2$ (M = Co, Ni) Core in the Complexes with Dimethyl-N-trichloroacetylamidophosphate $\{Cl_3C(O)NP(O)(OCH_3)_2\}^-$

Elizaveta A. Bundya^a, Vladimir M. Amirkhanov^{a,*}, Vladimir A. Ovchynnikov^a,
Victor A. Trush^a, Konstantin V. Domasevitch^{a,*}, Joachim Sieler^b, and Victor V. Skopenko^a

^a Inorganic Chemistry Department, Kiev University, Volodimirska St. 64, Kiev 252033, Ukraine

^b Institut für Anorganische Chemie, Universität Leipzig, Linnéstraße 3,
D-04103 Leipzig, Deutschland

* Reprint requests to Dr. V. M. Amirkhanov or Dr. K. V. Domasevitch.

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The coordination compounds of general formula $[M\{X\}_2(2\text{-propanol})]_2$ (M = Co(II) (**1**), Ni(II) (**2**); $\{X\} = Cl_3CC(O)NP(O)(OCH_3)_2$) have been prepared and characterized by means of IR, UV-VIS spectroscopy and X-ray analysis. The compounds are isomorphous according to X-ray powder diffraction studies. Crystal data for **1**: triclinic, $P\bar{1}$, with $a = 9.510(2)$, $b = 12.053(2)$, $c = 23.594(5)$ Å, $\alpha = 84.74(3)$, $\beta = 86.47(3)$, $\gamma = 75.45(3)^\circ$, $Z = 2$, $V = 2604.7(9)$ Å³, $R1 = 0.067$, $wR2 = 0.143$ for 6299 unique reflection used). The complex adopts a dimeric centrosymmetric molecular array with Co-O-Co bridges formed via the oxygen atoms of phosphoryl groups. This structure is stabilized by intradimeric hydrogen bonds of the type $P=O\cdots H$ with the coordinated 2-propanol. The metal atoms are coordinated in slightly distorted octahedra (Co-O 2.050(5)-2.140(5) Å). Unlike the β -diketonate compounds of similar structure, the dimeric complexes are stable towards donor species and in 2-propanol solution.