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Coordination diversity of N-phosphorylated amides and ureas towards viiib group cations

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Abstract

The behavior of ambidentate organophosphorus ligands is of general interest because the nature of the phosphorus-element bond influences directly on the structure of chelate complexes of these compounds. Reasons allowing the polyfunctional ligands to bind metal cations using different coordination modes, closely address the fundamental questions of chemistry, such as the nature of chemical bonding and the isomerism of coordination compounds, or the influence of the ligand structure on regioselectivity of the coordination bond formation and definition of a role of weak intramolecular interactions in the structure stabilization. In the framework of the presented review the information about ambidentate coordination properties of N-Thiophosphorylated thioamides, thioureas of common formula RC(X)NHP(Y)R'2 towards VIIIB group metal cations Co(II), Ni(II), Pt(II) and Pd(II) were summarized and discussed in comparison with organic and diphosphorus analogues: (i) N-acylamides and ureas of common formula RC(X)NHC(Y)R' (NAAU), and (ii) dichalcogenoimididiphosphinates R2P(X)NHP(Y)R'2 (IDP) (X, Y = O, S, Se).© 2008 by Nova Science Publishers, Inc. All rights reserved.