

Complexes of some transition metal ions with 2-methyl-1-vinylimidazole in aqueous solution and the solid state.

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The stability constants and structures of the complexes of Co^{3+} , Cu^{2+} , Zn^{2+} , Ni^{2+} and Cd^{2+} with 2-methyl-1-vinylimidazole in aqueous solution have been determined by potentiometric and spectrophotometric methods. The stability of the compounds depended much on the presence of the electron-attracting vinyl substituent contributing to the $\pi_{\text{M} \rightarrow \text{L}}$ back bonding. Further, nitrate complexes of cobalt(II) and copper(II) with 2-methyl-1-vinylimidazole (L) of general formulae $[\text{CoL}_3(\text{H}_2\text{O})(\text{NO}_3)]\text{NO}_3$ **1**, $[\text{CoL}_2(\text{NO}_3)_2]$ **2**, $[\text{CuL}_4(\text{NO}_3)_2] \cdot 2\text{H}_2\text{O}$ **3** and $[\text{CuL}_2(\text{NO}_3)_2]$ **4** have been prepared in the solid state. Full single-crystal X-ray analyses have been accomplished for compounds **1** and **4** which enabled the determination of angles and bond lengths. The compounds were identified on the basis of elemental analyses, EPR spectroscopy, IR, FIR and VIS-NIR absorption spectra and magnetochemical data. The immediate environment of the central ions is described by a distorted tetragonal bipyramid.

Adres publiczny

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