

Protolytic and complexing properties of 2-alkylaminomethylphenols with respect to copper(II) in aqueous ethanol

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Abstract

The acid-base and complexing properties of 2-butyl- (HL1), octyl- (HL2), dibutyl- (HL3), and dipentylaminophenol (HL4) in aqueous ethanol were characterized by spectrophotometry, pH measurements, and mathematic modeling of equilibria in solutions [$T = 25 \pm 0.05^\circ\text{C}$, $\mu = 0.1$ (KNO₃)]. The factors increasing and reducing the basicity of the amino group and the acidity of the phenol group were shown to compete in the ligands studied. Mono- and dialkylaminomethylphenols containing the same donor atoms form the mononuclear [CuL]⁺ and [CuL₂] complexes and the dinuclear [Cu₂(HL₁)₄]⁴⁺ and [Cu₂(HL)₃L]³⁺ complexes with the copper(II) cations.
