Reaction of *N*,*N*-Dimethyl-*N*'-(2-hydroxybenzyl)ethylenediamine with Copper(II) in the Presence of Surfactants

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Abstract — The protolytic properties of *N*,*N*-dimethyl-*N*'-(2-hydroxybenzyl)ethylenediamine (HL) and its complexation with copper(II) in the presence of cationic (cetyltrimethylammonium bromide) and nonionic (Triton X-100) surfactants were studied by pH-metry, spectrophotometry, and mathematical simulation of the equilibria. Cetyltrimethylammonium bromide affects the $H_2L_2 \rightleftarrows 2HL$ equilibrium. Along with the protonated monomeric and dimeric species, triprotonated tetrameric species were revealed in surfactant solutions, as in aqueous solutions of isopropyl alcohol. The surfactants affect the complexation of HL with Cu(II). The 1 : 2 complex with the phenolate form in solutions of cetyltrimethylammonium bromide is formed in a more acidic medium (pH ~5.5) compared to an aqueous solution of isopropyl alcohol (pH ~11). The apparent stability constants of the complexes increase in the presence of surfactants, especially of cetyltrimethylammonium bromide.