

Spectrochemical properties of noncubical transition metal complexes in solution. XII. Angular overlap studies of salicylideneethylenediamine Cu(II) complex in various solvents.

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Streszczenie

As a part of our general interest in the UV-Vis spectroscopy of multidentate mixed-donor ligands, the (salicylideneethylenediamine)Cu(II) complex has been prepared and characterized by elemental analyses, solubility in common solvents, molar conductivities, and ultraviolet (UV), and visible (Vis) spectroscopy. The combined results of spectrophotometric measurements and EPR spectra, as well as known the X-ray structure for solids, were used to determine the structure of the investigated complex in solutions. The spectra of [Cu(salen)] ($H_2\text{salen}$ = salicylideneethylenediamine), were measured in various solvents at room temperature, resolved by Gaussian analysis, and angular overlap model (AOM) treated in C_{2v} symmetry. Because of overparametrization problems, the bis(salicylaldehyde)Cu(II) complex has been characterized and AOM treated. The results of this have been used for AOM studies of [Cu(salen)]. The effect of the solvents upon the σ - and π -bonding ligand abilities is discussed.

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