SOME COMPLEXES OF METAL(II)CLORIDE WITH 3-C_7H_9N AND 4-C_7H_9N: PREPARATION, STRUCTURAL CHARACTERISATION, MAGNETIC PROPERTIES, AND FT-IR AND ELECTRONIC SPECTRAL STUDIES

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Some molecular parameters of 3 - C_7H_9N and 4 - C_7H_9N were calculated by using CNDO method in order to enlighten the experimental results. The transition metal compounds were obtained by dissolving stoichiometric amounts of M(II)Cl_2 (Mn^{+2}, Co^{+2}, Ni^{+2}, Cu^{+2}, Zn^{+2}, Cd^{+2}, Hg^{+2}) and ligand in ethanol. The results of microanalysis, magnetic susceptibilities and colors are also reported. Analysis of the complexes indicated the presence of two chlorine's per molecule. Also all the complexes contain metal atoms in a 6 - coordinate environment. The Fourier Transform Infrared (FT - IR) spectra of metal(II)chloride with 3 - C_7H_9N and 4- C_7H_9N complexes were investigated over the range of 4000 - 100 cm^{-1}. Vibrational modes were assigned to bands in the infrared spectra recorded at room temperature. The arrangement of ligands around the metal atom can be concluded from far-IR observation. The bands of lowest frequency observed in this work [around 170 cm^{-1}] are assigned to a bending mode which does not involve nitrogen i.e. δ (Cl - M - Cl). The result of electronic spectra are matched with far-IR spectra to comment on the structures.