CHAPTER _ IV

Summary

Structural chemistry of ligands containing hetero atoms like N and S is attaining importance in recent years. Similar systems often show structural variations, such complexes have applications and these systems are analogous with biological active molecules. Thiazole moeity constitutes such a system and hence structural chemistry of 2-4 Diamino-5-Chloro Thiazole was taken up. The complexes were synthesized and elemental analysis was carried out to get the molecular formula. Detailed study of electronic absorption spectroscopy, vibrational infrared absorption spectroscopy, thermogravimetric analysis, magnetic susceptibility and electrical conductivity were done and structures were assigned to Co(II), Ni(II), Cu(II), Zn(II), Cd(II) and Mn(II) complexes.

The thesis is devided into the four chapters. The first chapter reviews the structural elucidation work reported by earlier workers. The second chapter gives the details of preparatory methods of the ligands and complexes, their characterisation and the details of experimental methods. The third chapter opens with the study of Co(II) complexes. 2-4 Diamino-5-chloro Thiazole (DCT) forms ML_2X_2 type complexes, which ?

react with water and give rise to pale pink aquocomplexes of the formula $ML_2(H_2O)_2X_2$ and possess the octahedral structure. Ni(II) complexes of the type NiL_2X_2 were prepared. These complexes are dimeric in nature and possess a square pyramidal structure. On addition of auxiliary ligands like pyridine, quinoline, isoquinoline, 2-2' bipyridyl and 1-10 phenanthroline, the molecule breaks into a monomer of the formula $ML_2(Py)_2X_2$. These are octahedral in nature. Complexes of Mn (II), Cu(II), Cd(II) and Zn(II) were also synthesised and were assigned square planar structures.