

Research Paper :

## Studies on structural features of copper (II) complexes of ligand 3-phenylpyrazole I-carboxylo hydroxamic acid

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### ABSTRACT

The present study was aimed to prepare Ligand 3-Phenylpyrazole I-Carboxylo Hydroxamic Acid (HPPC = LH) and its complex with Copper (II) and derivation of structural formula of Copper (II) complex on the basis of Elemental analysis, Magnetic moment determination, U.V. and Infrared Spectral studies of Copper (II) complex, structure are assigned

**Key words :** Ligand, Copper (II) complex, Solvent, 3 Phenyl pyrazole 1 – Carboxylo hydroxamic acid

Much more work has been reported related to complexing behaviour of O, N, S, donor ligands and chelating molecules containing these atoms e.g. O/N, N/S, NSO etc. Such co-ordination compounds are well being used in chemotherapy. Relation to metal chelates in Cancer treatment is the earnest craze of the age.

A large scope of work still remains in this field. With a view to add some novel complexes, a number of chelates of some Hydroxamic Acid *i.e.* 3 – Phenyl Pyrazole I – Carboxylo Hydroxamic Acid with metal Ion Copper(II) have been prepared.

Verma *et al.*<sup>177</sup> have reported the copper (II) complexes of 4 – amino 3 – Hydrazine 5 – Mercapto 1, 2, 4, triazole . The complex are characterized by various analytical and spectral data.

the method reported by Blatt.

Cu(II) complex was prepared using Cupric Bromide / Formate Analar – grade of B.D.H.E. Merk. The molecular formula of the complex was determined on the basis of Elemental analysis. Magnetic moment determination was used to predict the geometry of complex. Geometry of complex was supported by u.v. spectral Analysis whereas Infrared Spectral study was used to determine the co-ordination site of ligand to metal Ion copper(II).

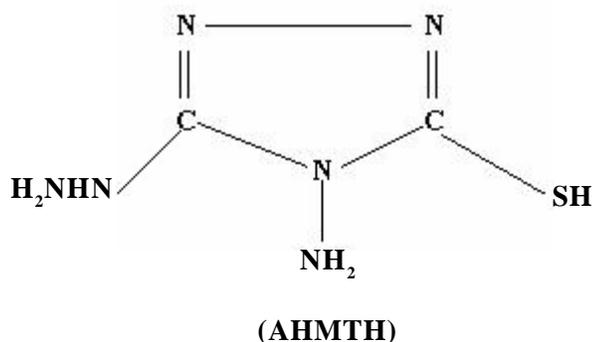
Elemental analysis will be done manually by standard methods of Analysis. Magnetic and Spectral analysis was done with the help of Advanced Laboratories on personal request (as was usually done)

### RESULTS AND DISCUSSION

#### Preparation of ligand :

Preparation of 3 – Phenyl Pyrazole I – Carboxyl Hydroxamic Acid (HPPC = LH)

The legand was prepared by the method reported by Blatt. 1 mole of KOH(56.1gm) dissolved in 10 ml. of Methanol was added to a solution of 0.67 mole of Hydroxyl Amine Hydrochloride (46.7gm) in 240ml. of Methanol. Both sol<sup>n</sup> were mixed together keeping the temperature range at 30<sup>o</sup> – 50<sup>o</sup>C. The mixture was left in ice both for five minute ensuring the complete precipitation of KCl. Then 0.35 mole of Ethyl 3 – Phenyl Pyrazole - I – Carboxylate was added in portion with constant shaking and after addition the solution was filtered immediately through section. The filtrate was kept in Erlenmeyer Flask for 36 hrs. Crystal of Potassium salt of 3 – Phenyl Pyrazole I – Carboxyl Hydroxamic Acid was filtered,



### MATERIALS AND METHODS

Ligand (HPPC = LH) was prepared in laboratory using Hydroxyl Amino Hydrochloride in Methanol, KOH in Methanol, Ethyl 3 – Phenyl Pyrazole I-Carboxylate by