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ABSTRACT

N-Hydroxyamides promise large field, both of theoretical nature and analytical value. The Complexing properties of the reagent can be modified by proper substitution. Hence a new Hydroxyamide hydro chloride was prepared by condensation of N-(4-fluoro) benzamidoylchloride and N-Phenyl Hydroxylamine at 0°-5° C in ether medium, white Crystals of N-Hydroxy-N-Phenyl N'-4-Fluoro Phenyl benzamide hydrochloride were separated. They were separated and recrystallised from absolute alcohol. The newly synthesised reagent was characterised on the basis of melting point, elemental analysis and I.R Spectra. The molecular formula C₁₉ H₁₆ N₂O FCl is confirmed from elemental analysis data Infra red spectra was examined in the region 4000-450 cm⁻¹ and empirical assignments have been made for principal adsorption bands associated with O-H--N,[>]C=N, C=NH and N-O stretching bands,

1. INTRODUCTION

Organic reagents have established position in analytical chemistry. The Selectivity of the organic reagent depend on the presence of functional group. The analytical value of a reagent can be improved by suitable substitution in to the molecule of the reagent According to kulberg¹ substitution of an electronegative group increases the acidity and decreases the basicity of the reagent.

A number of monobasic and bidentate chelating reagents have been reported for extraction and photometric determination of transition metal ions²⁻⁴, K. satyanarayanaadR.K.Mishra⁵ discussed for the first time analytical chemistry of Hydroxyamide Hydrochloride. The complexing properties of the reagents⁶are modified by substitution in reagent molecule hence a new N-Hydroxyamide hydrochloride has been prepared and characterised by elemental analysis, m.p and infra red spectra.

The introduction of hydroxyamide hydrochloride as new type of metal chelating agents opens a new field both of synthetic as well as analytical interest. As compared to hydroxyamic acid⁷ the present compound has wider scope as analytical reagent. The hydroxyamide functional grouping has three sites for substitution with various groups and a better understanding of the influence of substituent in the aromatic ring will help in improvement of this class of reagent. Therefore a new N-Hydroxy-N-(phenyl) N'(4 Fluoro) phenyl benzamide hydrochloride was synthesised and characterised on the basis of m.p elemental analysis and its infrared spectra.

2. EXPERIMENTAL

Nitrobenzene was reduced to N phenyl hydroxylamine⁸ with zinc dust in aqueous medium buffered with ammonium chloride 4-fluoro phenyl Benzamidoyl chloride was prepared by N-4-Fluoro benzamide by the action of thionyl chloride N-phenyl hydroxyl amine dissolved in dry diethyl ether was taken in a conical flask. fitted with a dropping funnel to this 4-fluoro benzamidoyl was added dropwise with stirring the temp was maintained at 0°-5° C The crude white solid was crystallised from absolute alcohol the melting point of the solid was found to be 166 °C

The elemental analysis of the compound, and infrared spectra were obtained from C.D.R.I Lucknow.

3. RESULTS AND DISCUSSION

The molecular formula of the compound is C₁₉ H₁₆ N₂ FCl which is confirmed by elemental analysis.

Calculated	C=66.56	H=4.67	N=8.17
Found	C=66.62	H=4.72	N=8.22

The spectra were recorded in KBR on perkin Elmer - 1800 (FTIR) 4000-450 cm⁻¹ equipped with sodium chloride optics. The principal adsorption bands were observed for O-H - N, C=N, C=NH and N-O stretching vibrations and their hydrochloride IR Spectra⁹ were compared.

The infrared spectra of newly synthesised hydroxyamidines have been studied in the region 4000 cm⁻¹ to 400 cm⁻¹. The characteristic bands associated with the hydroxyamidines functional group are due to C=N, NH - O-H N and N-O group, C-H which have been assigned in its IR spectra¹⁰. It has been observed that the band position C=N and O-H - N are not influenced significantly by substitution in aniline ring or in phenyl ring of hydroxylamine.

4. CONCLUSION

Hydroxy-N-Phenyl N-(4-Fluorophenyl) benzamidine hydrochloride is a white crystalline solid. Which can be used as a specific chelating agent for transition metal ions.

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