“Reactions of Some Schiff Base Complexes
of Copper, Nickel and Zinc with Some Amines”

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Abstract

Reaction of some Schiff base complexes with different amines have been investigated. A tetridentate Schiff base which is N,N-(Salicylidene)-4,5-dimethylphenylenediamine(H$_2$Sal$_2$Me$_2$Ph) is new whereas the other used Schiff bases and their complexes have been previously reported.

The complexes of the new Schiff base [M(Sal$_2$Me$_2$Ph)], M=Cu, Ni and Zn have been prepared and characterized. These three complexes in addition to complexes of tridentate Schiff bases [M(BN)]$_n$, [M(PN)]$_n$ and [M(BS)]$_n$ where M=Ni, Cu; (H$_2$BN) N-2-hydroxynaphtalidene-2-aminobenzoic acid, (H$_2$PN) N-2-hydroxynaphthalidene-2-aminophenol and (H$_2$BS) N-Salicylidene-2-aminobenzoic acid have been reacted with different amines in order to study the pathway of their reactions.

In case of the tetridentate Schiff base complexes [M(Sal$_2$Me$_2$Ph)] amine exchange took place. However, in case of the tridentate Schiff base complexes in addition to amine exchange, the displaced amine has coordinated to the metal to produce new mixed ligand complexes which are usually difficult to prepare.

The copper complexes are formulated as: [Cu(SalCyh)$_2$], [Cu(SalBut)$_2$], [Cu(SalHyd)], [Cu(NalBz)(AP)], [Cu(NalCyh)(AP)], [Cu(NalBut)(AP)], [Cu(NalBz)(AA)], [Cu(NalCyh)(AA)], [Cu(Sal$_2$Me$_2$ph)].

The nickel complexes are formulated as: [Ni(SalCyh)$_2$], [Ni(SalBut)$_2$], [Ni(SalHyd)], [Ni(NalBz)(AP)], [Ni(NalCyh)(AP)], [Ni(NalNH)(AP)], [Ni(Sal$_2$Me$_2$Ph)].

Zinc complexes are formulated as: [Zn(SalCyh)$_2$], [Zn(SalBut)$_2$] and [Zn(Sal$_2$Me$_2$ph)].EtOH.H$_2$O
The complexes were characterized by elemental analysis, infrared, UV-visible spectroscopy and electrical conductivity and magnetic susceptibility measurements.