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NOTES

Synthesis of Some New Sn(II) Schiff base Complexes

SHEKHAR SRIVASTAVA
School of studies in chemistry,
Jiwaji University, Gwalior-474 011, India.

The $SnLCl_2$ and Sn_2LCl_4 complexes [where L = 1, 5-bis (benzaldehyde) carbohydrazone; 1, 5-bis (acetophenone) carbohydrazone and 1, 5-bis (cinnamaldehyde) carbohydrazone] have been synthesised and characterised by elemental analysis, conductivity and XPS data.

Since the limited number of Sn(II) complexes with aromatic Schiff base ligands are known[1–6], interest has drawn to study the reaction of $SnCl_2$ with 1,5-bis (carbohydrazone) of benzaldehyde, acetophenone and cimamaldehyde.

Carbohydrazide was prepared by the reported method[7]. The Schiff bases 1, 5-bis (carbohydrazones) were prepared by reacting carbohydrazide with acetopheone, cinnamaldehyde or benzaldehyde in 1 : 2 molar ratio respectively.

The $SnLCl_2$ complexes were prepared when 1, 5-bis (acetophenone) carbohydrazone or 1, 5-bis (benzaldehyde) carbohydrazone or 1, 5-bis (cinnamaldehyde) carbohydrazone (1 mmol) was dissolved in dry methanol, to it was added $SnCl_2$ (1 mmol). The mixture was then refluxed for 8h. The resulting solid product was filtered, washed with methanol and air-dried.

The Sn_2LCl_4 complexes were prepared by similar procedure, by mixing and refluxing 1, 5-bis (carbohydrazones) of benzaldehyde, acetopheone or cinnamaldehyde and $SnCl_2$ in 1mmol : 2 mmol ratio respectively.

All these complexes $SnLCl_2$ and Sn_2LCl_4 are stable with high melting points and are insoluble in organic solvent except DMF and DMSO. Elemental analysis were within ± 0.5% for C, H, N and Cl. The molar conductance data below than 60 ohm^{-1} cm^2 mol^{-1} in DMF suggest that all are nonelectrolyte[8]. The binding energy data of $Sn^2P_{3/2,\,1/2}$ photoelectron peaks for $SnCl_2$, $SnCl_2$.L and Sn_2LCl_4 have shown that $Sn^2p_{3/2,\,1/2}$ binding energy value is highest in $SnCl_2$ and lowest in Sn_2LCl_4 (when L is same). One can conclude from these XPS data that 1, 5-bis (carbohydrazones) are coordinated to tin metal ion[9].

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