

NOTES

Studies on Dibenzyltellurium(IV) Complexes with Some Schiff Base Ligands

SHEKHAR SRIVASTAVA*, DILIP KUMAR SONI, DEEPA GAUTAM
and HARI SHANKAR GUPTA
School of Studies in Chemistry
Jiwaji University, Gwalior-474 011, India

Dibenzyltellurium(IV) complexes of tetradentate Schiff base ligands of the type $(C_6H_5CH_2)_2Te \cdot SB$ (where *SB* = Schiff base ligand) have been synthesised and characterised by elemental analysis, conductivity, IR and PMR.

Although a number of diorganotellurium(IV) complexes with aromatic Schiff base ligands are reported in literature, the reaction of $(C_6H_5CH_2)_2TeI_2$ with aromatic Schiff base ligands are less known. This paper deals with the synthesis and characterisation of dibenzyltellurium(IV) of the type $(C_6H_5CH)_2Te \cdot SB$ chelates.

The $(C_6H_5CH_2)_2TeI_2$ and Schiff bases i.e. SB_1 = bis(2-hydroxy-4-methoxy-benzaldehyde) ethylenedimine; SB_2 = bis(2-hydroxy-3-methoxy-benzaldehyde) ethylenediamine; SB_3 = bis(2-hydroxy-5-methoxy-benzaldehyde) ethylenediamine and SB_4 = bis(salicylaldehyde) were prepared, purified and characterised according to literature procedure.

Preparation of complexes:

To a dry chloroform solution containing $(C_6H_5CH_2)_2TeI_2$ (1 mmol) was added Schiff base (1 mmol), the resulting solution was refluxed for about 2 h. The brown complex was found, filtered and washed with ether and dried in vacuum.

Conductance measurements were obtained in DMF at room temperature using a Digisun electronic conductivity bridge. Infra-red spectra were obtained in CsI on a Perkin-Elmer 457 spectrometer. The PMR spectra were recorded in $CDCl_3$ on a PER 32 model spectrometer operating at 90 MHz using TMS as an internal reference.

All the complexes are sharp melting, brown solids and stable to air. Elemental analyses were within $\pm 0.5\%$ for C, H and N. The conductance measurements for all these prepared complexes in DMF have shown non-electrolyte nature.

All the complexes have shown the absorption band around $1620\text{--}1610\text{ cm}^{-1}$,

*Present address: Department of Chemistry, University of Allahabad, Allahabad, India.

which normally appears at 1600 cm^{-1} in the free ligands. The lowering of this band in the complexes indicates the coordination of nitrogen atom of azomethine groups to the tellurium. The far IR spectra have shown bands at 320 cm^{-1} , $420\text{--}410\text{ cm}^{-1}$ and $560\text{--}540\text{ cm}^{-1}$ which may be assigned as $\nu_{(\text{Te-O})}$, $\nu_{(\text{Te-N})}$ and $\nu_{(\text{Te-C})}$ respectively. Further, slight upfield shift in the PMF signals due to —CH=N and =N—CH_2 protons as compared to their free ligands ($\delta 8.55$ and $\delta 8.97$ respectively) was indicative of complexation of these Schiff base ligands to $(\text{C}_6\text{H}_5\text{CH}_2)_2\text{Te(IV)}$ moieties.

ACKNOWLEDGEMENT

One of the authors (DKS) is grateful to CSIR, New Delhi for the award of JRF.

REFERENCES

1. I.D. Sadekov, A.A. Maksimenko, A.G. Maslakov, G.K. Mehrotra, G.S. Borodkin, O.E. Kompan, Yu T. Struchkov, M.A. Fedotov and V.I. Minkin, *Metallorg. Khim.*, **2**, 298 (1989).
2. V.I. Minkin, A.A. Maksimenko, G.K. Mehrotra, A.G. Maslakov, O.E. Kampan, J.D. Sadekov, Yu T. Struchkov, and D.S. Yufit, *J. Organomet. Chem.*, **1**, 348 (1988).
3. A.A. Maksimenko, G.K. Mehrotra, and V.I. Minkin, *Zh. Org. Khim.*, **23**, 657 (1987).
4. A.A. Maksimenko, I.D. Sadekov, A.G. Maslakov, G.K. Mehrotra, O.E. Kampan, Yu T. Struchkov, S.V. Lindseman and V.I. Minkin, *Metallorg. Khim.*, **1**, 1151 (1988).
5. T.N. Srivastava and M.A. Siddiqui, *Indian J. Chem.*, **25A**, 785 (1986).
6. Y.D. Kulkarni and Surendra Srivastava, *Indian J. Chem.*, **22A**, 710 (1985).
7. P.J. MacCarthy, R.J. Hovey, K. Veno and A.E. Martell, *J. Am. Chem. Soc.*, **77**, 5820 (1955).
8. W.J. Greary, *Coord. Chem. Rev.*, **7**, 81 (1971).
9. V.B. Rana, P. Singh, D.P. Singh and M.P. Teotia, *Transition Met. Chem.*, **7**, 174 (1982).
10. S. Chandra and K.K. Sharma, *Transition Met. Chem.*, **8**, 1 (1983).
11. T.N. Srivastava, A.K.S. Chauhan and G.K. Mehrotra, *Indian J. Chem.*, **22A**, 708 (1985).
12. C.W. Sink and A.B. Harvey, *J. Chem. Soc. (D)*, 1023 (1969).

(Received: 19 January 1993; Accepted: 28 March 1994)

AJC-805