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Synthesis, Spectral and Thermal Properties of Some Penta-Coordinated Complexes of Oxovanadium(IV) Derived from Thiosemicarbazones of 4-Aminoantipyrine

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Abstract: The paper reports the synthesis of crystalline oxovanadium(IV), VO^{2+}, complexes of thiosemicarbazones, i.e. 4[N-(4'-nitrobenzalidene)amino]antipyrine thiosemicarbazone (4'-NO_2BAAPTS) and 4[N-(furan-2'-aldimine)amino]antipyrine thiosemicarbazone (FFAAPTS) with general composition VOX_2L (X = Cl, Br, I, NO_3 or NCS) and $VO(ClO_4)_2(L)H_2O$ (L = 4'-NO_2BAAPTS or FFAAPTS). All the complexes were characterized by elemental analyses, molar mass, molar conductance, magnetic susceptibility, infrared and electronic spectra. In all the complexes, both the thiosemicarbazones behave as neutral tridentate (N, N, S) ligands. The thermal properties of the representative complexes are also reported. The most probable geometry of the complexes is proposed.

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