One-dimensionally Hydrogen-bonded Silver(I) Saccharinate Complexes with *N*-(2-Aminoethyl)piperidine and *N*-(2-Hydroxyethyl)piperidine: Synthesis, Crystal Structures, FTIR and Thermal Studies

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Two new complexes [Ag(sac)(aepip)] (**1**) and [Ag(sac)(hepip)] (**2**) have been obtained by the reaction of $AgNO_3$ with Na(sac)·$2H_2O$ (sac = saccharinate) in the presence of *N*-(2-aminoethyl)piperidine (aepip) and *N*-(2-hydroxyethyl)piperidine (hepip), and characterized by elemental analysis, IR spectroscopy, thermal analysis and single crystal X-ray diffraction. Complexes **1** and **2** crystallize in the monoclinic space group $C2$ and triclinic space group $P\bar{1}$, respectively. In both complexes, silver(I) is tricoordinated. The sac ligand is N-coordinated, while aepip and hepip behave as N-N and N-O bidentate chelating ligands, respectively. The pip rings of both aepip amd hepip ligands adopt typical 'chair' conformation. The individual molecules are linked into one-dimensional chains by two N–H···O hydrogen bonds in **1**, and one O–H···O hydrogen bond in **2**. TG-DTG curves illustrated that the endothermic elimination of aepip and hepip ligands takes place in the early stages of thermal decomposition, while that of the sac moiety occurs exothermically at higher temperatures to give metallic silver.

Key words: Saccharinate Complex, Silver(I), Crystal Structure