A New One-Dimensional Coordination Polymer of Silver(I) with Bridging 2-(2-Aminoethyl)pyridine and Nitrato Ligands: $[\text{Ag}_2(\mu-\text{NO}_3)_2(\mu-\text{aepy})_2]_n$

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A new silver(I) nitrate complex of 2-(2-aminoethyl)pyridine (aepy), $[\text{Ag}_2(\mu-\text{NO}_3)_2(\mu-\text{aepy})_2]_n$, has been synthesized and characterized by elemental analysis, IR spectroscopy and single crystal X-ray diffractometry. Two silver(I) ions are doubly bridged by two bidentate aepy ligands forming dimeric building block $[\text{Ag}_2(\mu-\text{aepy})_2]$ units with a Ag···Ag distance of 3.0587(17) Å. These dimeric units are further doubly bridged by two nitrato ligands into a one-dimensional polymeric chain. The nitrato ligand exhibits an uncommon bidentate bridging mode of Ag–ONO–Ag. The title complex features a hydrogen bonded two-dimensional supramolecular framework formed via N–H···O hydrogen bonds, involving the uncoordinated O atom of the nitrate ligand and amine hydrogen atoms of aepy. The thermal stability of the title complex was investigated using thermogravimetry and differential thermal analysis.

Key words: 2-(2-Aminoethyl)-pyridine, Nitrato, Silver(I), One-Dimensional Coordination Polymer, Crystal Structure