

Synthesis and structure of hexachlorobismuthate of diethylammonium $[\text{Et}_2\text{NH}_2]_3^+[\text{BiCl}_6]^{3-}$ and solvate of tetraiododipyridinobismuthate of ammonium with pyridine $[\text{NH}_4]^+[\text{BiI}_4(\text{C}_5\text{H}_5\text{N})_2]^- \cdot 2\text{C}_5\text{H}_5\text{N}$

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Abstract

By the reaction of diethylammonium chloride with bismuth iodide in acetone there has been synthesized hexachlorobismuthate of diethylammonium $[\text{Et}_2\text{NH}_2]_3^+[\text{BiCl}_6]^{3-}$. From bismuth iodide and ammonium iodide in pyridine there has been obtained ammonium tetraiododipyridinobismuthate solvate with pyridine $[\text{NH}_4]^+[\text{BiI}_4(\text{C}_5\text{H}_5\text{N})_2]^- \cdot 2\text{C}_5\text{H}_5\text{N}$. According to X-ray structural analysis data the atoms of N in ammonium cations have tetrahedral coordination; atoms Bi in anions $[\text{BiCl}_6]^{3-}$ and $[\text{BiI}_4(\text{C}_5\text{H}_5\text{N})_2]^-$ are hexacoordinated (Bi-Cl 2.683(2)-2.877(2) Å; Bi-N 2.577(3), 2.652(3) Å; Bi-I 2.9542(3)-3.0778(3) Å).