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# Synthesis and structure of platinum complex $[Ph_4Sb(dmso)][PtCl_5(dmso)]$

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## Abstract

The reaction of equimolar amounts of pentaphenylantimony with hexachloroplatinohydrogen acid in dimethylsulfoxide was conducted to synthesize the complex $[Ph_4Sb(dmso)]^+[PtCl_5(dmso)]^-$ (**I**). Reaction of chloride tetraphenylantimony with hexachloroplatinohydrogen acid in acetone or with hexachloroplatinate potassium in water lead to the formation of the complex $[Ph_4Sb]^+_2[PtCl_6)]^{2-}$ (**II**), recrystallization of which from dimethylsulfoxide gives complex (**I**). According to the X-ray data in cations of complex **I** the atoms of antimony have trigonal-bipyramidal environment with the oxygen atom of the ligand in dimethylsulfoxide axial position (Sb(1,2)···O 2.541(2), 2.553(2) Å). In the octahedral anions dimethylsulfoxide ligand is coordinated with the platinum atom of sulfur atom (Pt (1,2)-S 2.305(2), 2.326(2) Å).