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Synthesis and structure of the solvates bis(μ_2-dimetylarsinato)-(μ_2-oxo)-bis(triphenylantimony) with benzene and dimethylsulfoxide

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Abstract

By interaction of pentaphenylantimony with dimethylarsine acid in the presence of oxygen in benzene or dimethylsulfoxide (dmso) we synthesized solvates of bis(μ_2-dimethylarsinato)-(μ_2-oxo)-bis(triphenylantimony) with benzene $[(Ph_3Sb)_2(\mu_2\text{-}O_2AsMe_2)_2(\mu_2\text{-}O)]\cdot 0.5C_6H_6$ (**I**) and dimethylsulfoxide $[(Ph_3Sb)_2(\mu_2\text{-}O_2AsMe_2)_2(\mu_2\text{-}O)]\cdot$0.5dmso (**II**). According to X-ray data, in complex **I** antimony atoms, linked together by two bidentate dimethylarsinato-ligands and a bridging oxygen atom have the configuration of an octahedron: axial angles CSbO are 167.62(11)°-173.28(10)°. The bond lengths of Sb-C are 2.156(3)-2.176(3) Å. The distances of Sb-O(As) are 2.111(2)-2.158(2) Å, in the fragment Sb-O-Sb bond lengths are 1.967(2) Å and 1.968(2) Å. Arsenic atoms have tetrahedral configuration (CAsC 108.03(17)°-110.29(16)°, CAsO 106.62(14)°-110.66(13)°). Bond lengths As-C and As-O are 1.911(3)-1.915(3) Å and 1.681(2)-1.691(2) Å respectively.