Thematic Section: Preparative Research. **Full Paper**
Subsection: Organoelemental Chemistry. *Reference Object Identifier* – ROI: jbc-02/16-47-9-17
Publication is available for discussion within the functioning of the permanent internet-Conference "New methods of synthesis, structure and application of organoelemental compounds"
http://butlerov.com/synthesys/
Submitted on November 28, 2016.

Synthesis and structure of *bis*(tetraphenylantimony) oxalate dioxane solvate

© **Vladimir V. Sharutin**,*+ **Olga K. Sharutina**, **Ekaterina V. Artemeva**, and **Yulia O. Gubanova**
Chemical Faculty. South-Ural State University. Lenina St., 76. Cheliabinsk, 454080. Russia.
Phone: +7 (351) 267-95-70. E-mail:sharutin50@mail.ru.

*Supervising author; +Corresponding author

Keywords: synthesis, solvate, oxalate, tetraphenylantimony, structure, X-ray analysis.

Abstract

The reaction of pentaphenylantimony and oxalic acid (2:1 mol, 2 h, 90°C) in dioxane has led to the formation of *bis*(tetraphenylantimony) oxalate dioxane solvate (**1**), the structure of which is determined by X-ray diffraction analysis. The antimony atoms of the binuclear compound **1** (M = 1036.42, monoclinic, $P2_1/c$, a = 11.3204(4) Å, b = 20.2822(7) Å, c = 22.7088(7) Å, β = 93.8490(10)°, V = 5202.2(3) Å^3, Z = 4, ρ = 1.323 г/см^3, μ = 1.083 мм$^{-1}$, $F(000)$ = 2088.0, R_{int} = 0.0942, $GOOF$ = 1.028, R_1 = 0.0570, wR_2 = 0.1761) has distorted octahedral coordination (axial angles CSbC, OSbC are equal to 156.6(3)-158.9(3)°, 161.6(2)-165.0(2)°, respectively) with tetradentate bridging oxalate ligand (Sb–C 2.142(7)-2.339(5) Å). The distances Sb–O, O–C, C–C in two five-membered metallocycles [SbO_2C_2] equal 2.329(5)-2.357(4) Å, 1.239(8)-1.262(8) Å, 1.571(9) Å, respectively.