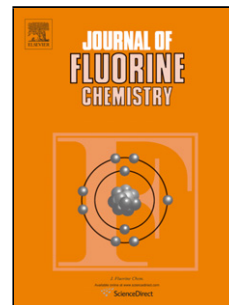


## Accepted Manuscript

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PII: S0022-1139(18)30295-1  
DOI: <https://doi.org/10.1016/j.jfluchem.2018.09.005>  
Reference: FLUOR 9219

To appear in: *FLUOR*

Received date: 18-7-2018  
Revised date: 14-9-2018  
Accepted date: 19-9-2018

Please cite this article as: Sharutin VV, Sharutina OK, Efremov AN, Il'inykh ES, Eltsov OS, Synthesis and structure of chlorotriphenylantimony pentafluoro- and pentachloroaroxides, *Journal of Fluorine Chemistry* (2018), <https://doi.org/10.1016/j.jfluchem.2018.09.005>

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# Synthesis and structure of chlorotriphenylantimony pentafluoro- and pentachloroaroxydes

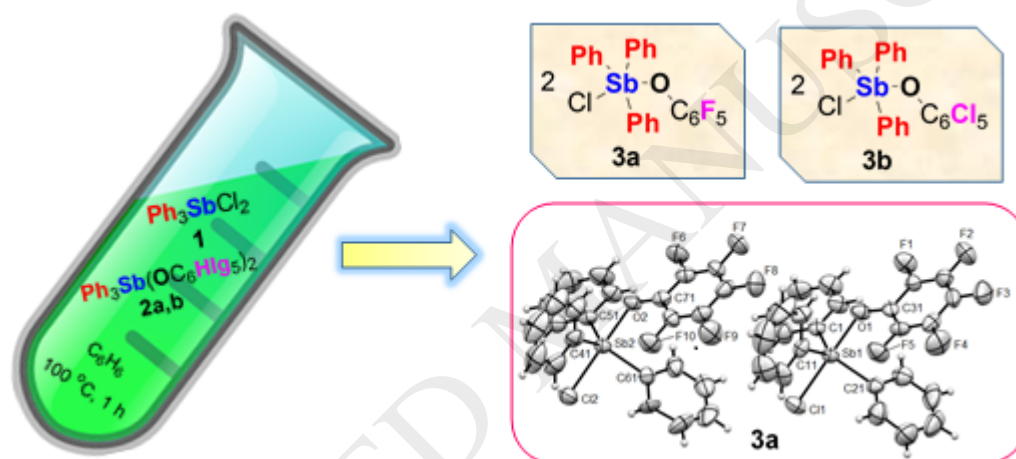
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Graphical abstract



## Highlights

- A facile synthesis of fluoro- and chloro-containing antimony(V) derivatives via ligand redistribution reaction was reported
- New chloro(pentafluorophenoxy)- and chloro(pentachlorophenoxy)triphenylantimony were first obtained in high yields
- The structure of synthesized compounds was unambiguously confirmed by spectral analysis and X-ray diffraction study

## ABSTRACT

Chloro(pentafluorophenoxy)triphenylantimony  $\text{Ph}_3\text{SbCl}(\text{OC}_6\text{F}_5)$  (**3a**) and chloro(pentachlorophenoxy)triphenylantimony  $\text{Ph}_3\text{SbCl}(\text{OC}_6\text{Cl}_5)$  (**3b**) were synthesized by the reactions of triphenylantimony dichloride (**1**) with bis(pentafluorophenoxy)triphenylantimony (**2a**) and bis(pentachlorophenoxy)triphenylantimony (**2b**), respectively. The structure of compounds **3a,b** was confirmed by IR,  $^1\text{H}$ ,  $^{13}\text{C}\{^1\text{H}\}$  and  $^{19}\text{F}\{^1\text{H}\}$  NMR spectroscopy, elemental analysis and single-crystal X-ray diffraction study. According to X-ray diffraction data, two types of crystallographically independent molecules exist in crystals **3a** and **3b**. The antimony atoms have a distorted trigonal bipyramidal coordination with the chlorine and oxygen atoms in axial positions. The axial OSbCl angles in **3a** and **3b** are  $177.07(19)^\circ$ ,  $177.09(19)^\circ$  and  $178.25(5)^\circ$ ,  $178.28(5)^\circ$ , respectively; the equatorial angles are  $118.0(9)^\circ$ – $122.2(4)^\circ$  (**3a**) and  $113.49(8)^\circ$ – $129.23(8)^\circ$  (**3b**). The Sb–C equatorial bond lengths are

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