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ANTIMONYPENTAFLUOROORTHOTELLURATES:  $\text{Sb}(\text{OTeF}_5)_3$ ,  $\text{Sb}(\text{OTeF}_5)_5$  AND SALTS OF  $\text{Sb}(\text{OTeF}_5)_6^-$ 

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Antimony(III)pentafluoroorthotellurate has been synthesized from  $\text{SbF}_3$  and  $\text{B}(\text{OTeF}_5)_3$ . Contrary to a previous report it is a low melting, sublimable solid (mp =  $28^\circ$ , bp (0.1 torr) =  $68^\circ$ ,  $^{19}\text{F}$  - NMR :  $\text{AB}_4$  spinsystem  $\delta$  (A) =  $-42.7$ ,  $\delta$  (B) =  $-38.1$ ,  $J$  (AB) = 186 Hz). It reacts with  $\text{F}_2$ ,  $\text{Cl}_2$  and  $\text{Br}_2$  to give  $\text{SbF}_2(\text{OTeF}_5)_3$ ,  $\text{SbCl}_4^+\text{Sb}(\text{OTeF}_5)_6^-$  and  $\text{SbBr}_4^+\text{Sb}(\text{OTeF}_5)_6^-$  respectively. Interaction of  $\text{Xe}(\text{OTeF}_5)_2$  and  $\text{Sb}(\text{OTeF}_5)_3$  yields  $\text{Sb}(\text{OTeF}_5)_5$ , which is unstable at room temperature. Salts containing the new anion  $\text{Sb}(\text{OTeF}_5)_6^-$  have been synthesized either from  $\text{Sb}(\text{OTeF}_5)_5$  and a corresponding pentafluoroorthotellurate e.g.  $\text{Sb}(\text{OTeF}_5)_5 + \text{NMe}_4^+\text{OTeF}_5^- = \text{NMe}_4^+\text{Sb}(\text{OTeF}_5)_6^-$ , or from  $\text{SbCl}_4^+\text{Sb}(\text{OTeF}_5)_6^-$  and an appropriate chloride  $\text{SbCl}_4^+\text{Sb}(\text{OTeF}_5)_6^- + \text{NOCl} = \text{SbCl}_5 + \text{NO}^+\text{Sb}(\text{OTeF}_5)_6^-$ , or oxidatively, using a mixture of  $\text{Xe}(\text{OTeF}_5)_2$  and  $\text{Sb}(\text{OTeF}_5)_5$ , e.g.  $\text{C}_6\text{F}_6 + 1/2 \text{Xe}(\text{OTeF}_5)_2 + \text{Sb}(\text{OTeF}_5)_5 = \text{C}_6\text{F}_6^+\text{Sb}(\text{OTeF}_5)_6^- + 1/2 \text{Xe}$ .

## I-60

## PREPARATION AND STEREOCHEMISTRY OF ALKYL TELLURIUM(IV) FLUORIDES AND PENTAFLUOROTELLURATES(VI)

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Alkyltellurium(IV)iodides interact with  $\text{AgF}$  with the formation of alkyltellurium(IV)fluorides and with  $\text{AgOTeF}_5$  with the formation of the respective pentafluorotellurates(VI). Depending on the number of alkyl groups these compounds show a drastic variation with respect to molecular structure and steric rigidity as revealed by  $^{19}\text{F}$ - and  $^{125}\text{Te}$ -n.m.r. spectroscopy.