



>>Entry Name: Antimony chloride oxide (SbClO), 9Cl, 8Cl

Synonym(s): Chlorooxostibine, 10Cl. Chlorooxoantimony(III)

CAS Registry Number: 7791-08-4

SbClO

Molecular Formula: ClOSb

Molecular Weight: 173.202

Accurate Mass: 171.867588

Percentage Composition: Cl 20.47%; O 9.24%; Sb 70.29%

General Statement: Monoclinic. Consists of puckered sheets in which 2/3 of the Sb atoms are linked to 2 oxygens and 1 chlorine, and the remaining Sb atoms to 4 oxygens, the $(\text{Sb}_6\text{O}_6\text{Cl}_4)^{2(+)}$ sheets being held together by $\text{Cl}^{(-)}$ ions. Two types of Cl atoms distinguished by Sb-Cl length, 230-250 pm within the polymeric layer and 290 pm between Sb and inter-layer Cl

Source/Synthesis: Synth. from $\text{SbCl}_3 + \text{H}_2\text{O}$

Use/Importance: Fireproofing agent

Physical Description: Colourless cryst. or cryst. powder

Solubility: Sol. aq. HCl and aq. tartaric acid

Other Data: Dec. in $\text{H}_2\text{O} \rightarrow \text{Sb}_2\text{O}_3$. When heated at $250^\circ \rightarrow \text{Sb}_2\text{Cl}_2\text{O}_5$, and at $>320^\circ \rightarrow \text{Sb}_2\text{O}_3$

References:

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Brauer, G., *Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **1**, 589, (*synth*)

Glybin, V.P. *et al.*, *Zh. Neorg. Khim.*, 1980, **25**, 313; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1980, **25**, 170, (*struct*)