



>>Entry Name: Antimony oxide (Sb₂O₄), 8Cl

Synonym(s): Antimony(III) antimony(V) tetroxide. Antimony orthoantimonate

CAS Registry Number: 1332-81-6

Related CAS Registry Numbers(s): 1314-75-6 11118-45-9 12417-87-7

Sb^{III}Sb^VO₄

Molecular Formula: O₄Sb₂

Molecular Weight: 307.498

Accurate Mass: 305.787302

Percentage Composition: O 20.81%; Sb 79.19%

General Statement: Mixed valence compd.

Source/Synthesis: Synth. by heating Sb₂O₃ in air at 700-1000°, or by heating Sb₂O₅ for long periods at red heat

Use/Importance: Yellow pigment in glass

Physical Description: Minute lustrous cryst., yellow when hot

Solubility: Insol. H₂O

Other Data: Stable in air at 900°. Insol. dil. acids or alkalis. Sol. hot conc. HCl, and conc. H₂SO₄. At very high temps. → O₂ + Sb₂O₃

Aldrich: 22945-8

>>Variant: α-form

Molecular Formula: O₄Sb₂

Molecular Weight: 307.498

Accurate Mass: 305.787302

Percentage Composition: O 20.81%; Sb 79.19%

General Statement: Orthorhombic. Sb^VO₆ octahedra share vertices forming parallel layers joined by pairs of Sb^{III}O₄ tetragonal pyramids. Interatomic distances: Sb^{III}-O 185.7-261.9, Sb^V-O 191.6-205.1 pm

Other Data: Yields β-form at 820-850°

>>Variant: β-form

Molecular Formula: O₄Sb₂

Molecular Weight: 307.498

Accurate Mass: 305.787302

Percentage Composition: O 20.81%; Sb 79.19%

General Statement: Monoclinic. Sb^VO₆ octahedra form parallel layers in a direction different to that in the α-form. Distorted tbp. of oxygens around Sb^{III}, Sb atoms between corrugated layers of oxygen atoms

Source/Synthesis: Obt. from Sb₆O₁₃ at 850° in air; from α-form at 820-850°

Physical Description: Cryst. may be colourless, pink, orange or yellow depending on manner of growth

Other Data: Possesses no ferroelectric props. and no struct. phase transitions between -196° and 700° (a phase transition has been reported at *ca.* 565°)

>>Variant: Mineral-form

Synonym(s): Stibiolite. Cervantite. Stibiconite. Many other names

CAS Registry Number: 12340-12-4

Molecular Formula: O₄Sb₂

Molecular Weight: 307.498

Accurate Mass: 305.787302

Percentage Composition: O 20.81%; Sb 79.19%

General Statement: The name Stibiconite is also applied to various hydrated forms of Sb₂O₄. Struct. identical to the α-form

Source/Synthesis: Occurs with Sb ores in Tuscany, the Ukraine, Czechoslovakia, Iran, Turkey and Canada

References: