

**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . Crystals prismatic along [001], less commonly along [100], flattened on {010}, to 2 cm, spearhead-shaped with complex terminations. In fan-shaped or stellate aggregates of crystals; lamellar, columnar, granular, massive.

**Physical Properties:** *Cleavage:* {110}, perfect; {010}, imperfect. *Tenacity:* Brittle. Hardness = 2.5–3 D(meas.) = 5.76 D(calc.) = 5.828

**Optical Properties:** Transparent to translucent. *Color:* Colorless, snow-white, pale yellow, pink, gray to brownish; colorless in transmitted light. *Streak:* White. *Luster:* Adamantine, pearly on cleavages.

*Optical Class:* Biaxial (-). *Orientation:*  $X = a; Y = b; Z = c$ . *Dispersion:*  $r < v$  or  $r > v$ .  $\alpha = 2.18$   $\beta = 2.35$   $\gamma = 2.35$   $2V(\text{meas.}) = \text{Very small}$ .

**Cell Data:** *Space Group:*  $Pccn$ .  $a = 4.911(1)$   $b = 12.464(2)$   $c = 5.412(1)$   $Z = 4$

**X-ray Powder Pattern:** Synthetic.

3.142 (100), 3.118 (75), 3.494 (25), 3.174 (20), 1.8046 (20), 4.571 (18), 2.650 (14)

**Chemistry:**

	(1)	(2)
Sb	82.79	83.53
O	[17.21]	16.47
Total	[100.00]	100.00

(1) Tatasi, Bolivia; O by difference. (2) Sb<sub>2</sub>O<sub>3</sub>.

**Polymorphism & Series:** Dimorphous with sénarmontite.

**Occurrence:** An alteration product of antimony-bearing minerals in the oxidized zone of hydrothermal antimony deposits.

**Association:** Stibnite, antimony, stibiconite, cervantite, kermesite, tetrahedrite.

**Distribution:** Widespread; a few localities for good material include: in France, from the Chalanches mine, near Allemont, Isère. At Bräunsdorf, near Freiberg, Saxony, Germany. Large crystals from Příbram, Czech Republic. At Pernek, near Pezinok, Slovakia. From Baia Sprie (Felsöbánya), Romania. At the Cetine mine, 20 km southwest of Siena, Tuscany, Italy. In several mines around St. Endellion and elsewhere in Cornwall, England. At Sensa (Haminat mine), Aïn-el-Bebbouch, Qacentina (Constantine), Algeria. In the Globe and Phoenix mine, Kwekwe (Que Que), Zimbabwe. From Canada, in the Lac Nicolet mine, South Ham, Quebec. At Sombrerete and Noche Buena, Mazapil, Zacatecas, Mexico. Fine crystals from the San José mine, near Oruro, and at Tatasi, Potosí, Bolivia. In the Xikuanshan antimony mine, Lengshuijiang, Shaoyang, Hunan Province, China. From Khaydarkan, Fergana Valley, Alai Range, Kyrgyzstan.

**Name:** To honor Basilius Valentinus, 15th century alchemist, who early wrote concerning antimony.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 547–550. (2) Svensson, C. (1974) The crystal structure of orthorhombic antimony trioxide, Sb<sub>2</sub>O<sub>3</sub>, Acta Cryst., 30, 458–461. (3) (1960) NBS Circ. 539, 10, 6.