

**Stibiobetafite**

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**Crystal Data:** Cubic; may be metamict. *Point Group:*  $4/m\bar{3}2/m$ . Rare rounded octahedra with small cube modifications, to 8 mm; commonly anhedral, granular, in veinlets and aggregates.

**Physical Properties:** *Fracture:* [Conchoidal to uneven] (by analogy to betafite).  
*Tenacity:* Brittle. Hardness =  $\sim 5$  D(meas.) = 5.30 (on impure material). D(calc.) = 5.19

**Optical Properties:** Semitransparent. *Color:* Dark brown to brown-black; brown in transmitted light; medium gray in reflected light. *Streak:* Pale brown to cream.

*Luster:* Vitreous.

*Optical Class:* Isotropic.  $n = > 1.78$

**Cell Data:** *Space Group:*  $Fd\bar{3}m$ .  $a = 10.351$   $Z = 8$

**X-ray Powder Pattern:** Věžná, Czech Republic; after heating at 700 °C for one hour. 2.988 (10), 1.829 (6), 1.561 (5), 2.581 (4), 5.94 (3), 1.495 (3), 1.187 (3)

Chemistry:	(1)		(1)	
	Nb <sub>2</sub> O <sub>5</sub>	21.6	PbO	0.13
	Ta <sub>2</sub> O <sub>5</sub>	19.3	SnO	2.9
	TiO <sub>2</sub>	16.5	CaO	14.5
	Al <sub>2</sub> O <sub>3</sub>	0.49	Na <sub>2</sub> O	0.30
	Sb <sub>2</sub> O <sub>3</sub>	23.2	F	0.15
	FeO	0.6	H <sub>2</sub> O	0.44
	MnO	0.6	-O = F <sub>2</sub>	0.06
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			Total	100.65

(1) Věžná, Czech Republic; by electron and ion microprobe on a selected grain; total Sb as Sb<sub>2</sub>O<sub>3</sub>, Fe as FeO, Mn as MnO, Sn as SnO; corresponds to  $(\text{Ca}_{1.11}\text{Sb}_{0.69}^{3+}\text{Sn}_{0.09}\text{Fe}_{0.04}\text{Mn}_{0.04}\text{Na}_{0.04})_{\Sigma=2.01}(\text{Ti}_{0.89}\text{Nb}_{0.70}\text{Ta}_{0.38}\text{Al}_{0.04})_{\Sigma=2.01}\text{O}_6[\text{O}_{0.76}(\text{OH})_{0.21}\text{F}_{0.03}]_{\Sigma=1.00}$ .

**Mineral Group:** Pyrochlore group, betafite subgroup;  $\text{Sb}_A > 20\%$ ;  $2\text{Ti}_B \geq (\text{Nb} + \text{Ta})_B$ .

**Occurrence:** As replacement masses and in veinlets, in a granite pegmatite in a serpentinite.

**Association:** Columbite, niobian rutile, antimony, stokesite, cassiterite, zircon, albite.

**Distribution:** From Věžná, Czech Republic.

**Name:** From the Latin for antimony, STIBium, in its composition, and as a member of the *betafite* subgroup of the pyrochlore group.

**Type Material:** University of Manitoba, Winnipeg, M5233; Royal Ontario Museum, Toronto, Canada, M35630.

**References:** (1) Černý, P., F.C. Hawthorne, J.H.G. Laflamme, and J.R. Hinthorne (1979) Stibiobetafite, a new member of the pyrochlore group from Věžná, Czechoslovakia. *Can. Mineral.*, 17, 583–588. (2) (1981) *Amer. Mineral.*, 66, 1278 (abs. ref. 1).