Schiavinatoite $(Nb, Ta)BO_4$

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Crystal Data: Tetragonal. Point Group: 4/m 2/m 2/m. As portions of prismatic tetragonal dipyramidal crystals, intergrown with béhierite, to 2 cm.

Physical Properties: Hardness = ~ 8 D(meas.) = n.d. D(calc.) = 6.548

Optical Properties: Transparent. Color: Colorless. Streak: White. Luster: Vitreous. Optical Class: Uniaxial (+). n = 2.30(5), birefringent. $\omega = \text{n.d.}$ $\epsilon = \text{n.d.}$

Cell Data: Space Group: $I4_1/amd$. a = 6.219(5) c = 5.487(5) Z = 4

X-ray Powder Pattern: Antsongombato, Madagascar; calculated pattern, very close to béhierite.

4.115 (100), 3.110 (84), 2.328 (49), 1.598 (42), 2.481 (36), 1.939 (29), 1.646 (25)

Chemistry:

	(1)	(2)
B_2O_3	[16.60]	16.44
$\overline{\mathrm{Nb}_2}\overline{\mathrm{O}_5}$	33.08	31.38
Ta_2O_5	50.37	52.18
Total	[100.05]	100.00

(1) Antsongombato, Madagascar; by electron microprobe, average of 16 analyses, B_2O_3 calculated from stoichiometry; corresponds to $(Nb_{0.52}Ta_{0.48})_{\Sigma=1.00}BO_4$. (2) $(Nb, Ta)BO_4$ with Nb:Ta=1:1.

Occurrence: Very rare in miarolitic cavities in a pegmatite dike.

Association: Béhierite, rhodizite, elbaite-liddicoatite, spodumene, pollucite, danburite, apatite, quartz, feldspar.

Distribution: From Antsongombato, south of Betafo, Madagascar.

Name: To honor Professor Guiseppe Schiavinato (1915–1996), Italian mineralogist, who supported the advancement of mineralogy in Italy.

Type Material: City Museum of Natural History, Milan, Italy, M31137.

References: (1) Demartin, F., V. Diella, C.M. Gramaccioli, and F. Pezzotta (2001) Schiavinatoite, (Nb, Tb)BO₄, the Nb analogue of behierite. Eur. J. Mineral., 13, 159–165.