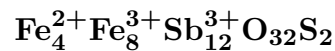


Versiliaite



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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Crystals, very rare, platy on {001}; commonly in massive aggregates.

Physical Properties: *Cleavage:* Perfect on {110}. Hardness = n.d. VHN = 330 (20 g load). D(meas.) = 5.12 D(calc.) = [5.32]

Optical Properties: Opaque. *Color:* Black. *Luster:* Metallic.
Optical Class: Uniaxial.

R₁–R₂: (470) 18.5–19.4, (546) 18.5–17.8, (589) 18.3–16.9, (650) 17.7–16.2

Cell Data: *Space Group:* *Pbam*. $a = 8.492(5)$ $b = 8.326(5)$ $c = 11.938(7)$ $Z = 1$

X-ray Powder Pattern: Buca della Vena mine, Italy.

3.196 (100), 3.167 (97), 2.972 (81), 2.682 (40), 1.946 (40), 1.652 (33), 5.94 (25)

Chemistry:

	(1)	(2)
FeO	11.70	10.62
Fe ₂ O ₃	14.92	23.59
As ₂ O ₃	4.63	
Sb ₂ O ₃	60.12	64.60
ZnO	2.96	
S	1.50	2.37
–O = S	0.75	1.18
Total	95.08	100.00

(1) Buca della Vena mine, Italy; by electron microprobe, Fe²⁺:Fe³⁺ from crystal-structure analysis; corresponds to Fe_{4.65}²⁺Zn_{1.04}Fe_{5.33}³⁺(Sb_{11.76}³⁺As_{1.34}³⁺)_{Σ=13.10}O₃₂S_{1.33}. (2) Fe₄²⁺Fe₈³⁺Sb₁₂³⁺O₃₂S₂.

Occurrence: In an iron ore deposit in barite formed by metasomatic processes at the contact between phyllites and dolostones.

Association: Schafarzikite, apuanite, derbylite, barite, magnetite, hematite, pyrite.

Distribution: In the Buca della Vena mine, northeast of Stazzema, Apuan Alps, Tuscany, Italy.

Name: For the Versilia Valley, Apuan Alps, Italy, where it was found.

Type Material: University of Pisa, Pisa, Italy, 3211.

References: (1) Mellini, M., S. Merlino, and P. Orlandi (1979) Versiliaite and apuanite, two new minerals from the Apuan Alps, Italy. *Amer. Mineral.*, 64, 1230–1234. (2) Mellini, M. and S. Merlino (1979) Versiliaite and apuanite: derivative structures related to schafarzikite. *Amer. Mineral.*, 64, 1235–1242. (3) Mellini, M., M. Amouric, A. Baronnet, and G. Mercuriot (1981) Microstructures and nonstoichiometry in schafarzikite-like minerals. *Amer. Mineral.*, 66, 1073–1079.