

Sabelliite

$\text{Cu}_2\text{Zn}(\text{AsO}_4, \text{SbO}_4)(\text{OH})_3$

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Crystal Data: Hexagonal. *Point Group:* $\bar{3}$. Crystals are tabular on {001}, showing only {001} with a characteristic coinlike circular outline, to 200 μm ; usually in aggregates of crystals.

Physical Properties: *Tenacity:* Brittle. Hardness = ~ 4.5 VHN = 322–469, 386 average (15 g load). D(meas.) = n.d. D(calc.) = 4.65

Optical Properties: Transparent. *Color:* Emerald-green. *Streak:* Pale green. *Luster:* Adamantine.

Optical Class: Uniaxial (-). $\omega = 1.802(2)$ $\epsilon = 1.797(2)$

Cell Data: *Space Group:* $P\bar{3}$. $a = 8.197(2)$ $c = 7.312(1)$ $Z = 3$

X-ray Powder Pattern: Is Murvonis mine, Sardinia, Italy. 2.522 (100), 1.550 (100), 1.805 (92), 2.166 (88), 1.513 (85), 4.11 (55), 3.66 (52)

Chemistry:

	(1)
As ₂ O ₅	23.07
Sb ₂ O ₅	6.59
SiO ₂	0.71
CuO	43.56
ZnO	19.48
H ₂ O	[6.05]
Total	[99.46]

(1) Is Murvonis mine, Sardinia, Italy; by electron microprobe, average of 20 spots on four crystals, H₂O calculated from direct determination of O content, structural H₂O absent by IR; corresponds to $\text{Cu}_{2.19}\text{Zn}_{0.96}(\text{As}_{0.80}\text{Sb}_{0.16}\text{Si}_{0.05})_{\Sigma=1.01}\text{O}_{4.31}(\text{OH})_{2.69}$.

Occurrence: A rare mineral in the oxidized zone of a hydrothermal copper deposit, formed by weathering of sulfides and sulfosalts.

Association: Theisite, malachite, azurite, tetrahedrite.

Distribution: From the Is Murvonis mine, Domusnovas, Iglesias district, Sardinia, Italy.

Name: To honor Dr. Cesare Sabelli (1934–), Consiglio Nazionale della Ricerche, Florence, Italy, who has worked with the copper-bearing alteration minerals of Sardinia, Italy.

Type Material: Museum of Natural History, University of Florence, Florence, Italy, 2053/RI.

References: (1) Olmi, F., A. Santucci, and R. Trosti-Ferroni (1995) Sabelliite, a new copper-zinc arsenate-antimonate mineral from Sardinia, Italy. *Eur. J. Mineral.*, 7, 1325–1330. (2) Olmi, F., C. Sabelli, and R. Trosti-Ferroni (1995) The crystal structure of sabelliite. *Eur. J. Mineral.*, 7, 1331–1337. (3) (1996) *Amer. Mineral.*, 81, 1014–1015 (abs. refs. 1–2).