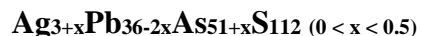


Argentoliveingite

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Part of an elongate, coarsely crystalline, massive aggregate grading into prismatic, subparallel crystals with complex forms.

Physical Properties: *Cleavage:* None. *Tenacity:* Brittle. *Fracture:* Conchoidal. Hardness = 4 VHN = 208-225, 217 average (25 g load). D(meas.) = n.d. D(calc.) = 5.23

Optical Properties: Opaque. *Color:* Dark gray, white in reflected light with red internal reflections on thin edges or grain boundaries. *Streak:* Black. *Luster:* Metallic.
Optical Class: *Anisotropism:* Moderate, dark gray to neutral.
 R₁-R₂: (470) 36.6-41.5, (546) 34.4-39.4, (589) 32.9-37.8, (650) 30.7-35.2

Cell Data: *Space Group:* $P\bar{1}$. $a = 7.905(2)$ $b = 8.469(2)$ $c = 137.96(4)$ $\alpha = 89.592(2)^\circ$
 $\beta = 88.969(2)^\circ$ $\gamma = 89.893(2)^\circ$ $Z = 2$

X-Ray Diffraction Pattern: Calculated pattern.
 3.668 (100), 2.938 (94), 3.009 (91), 2.7305 (88), 2.9943 (87), 3.781 (85), 3.553 (83)

Chemistry:	(1)
Ag	2.31
Tl	0.35
Pb	46.65
Sb	0.83
As	25.36
<u>S</u>	<u>24.27</u>
Total	99.97

(1) Lengnabach quarry, Imfeld, Binntal, Canton Wallis, Switzerland; average electron microprobe analysis; corresponds to Ag_{3.17}Tl_{0.40}Pb_{33.31}Sb_{1.01}As_{50.08}S_{112.02}.

Polymorphism & Series: Sartorite homologous series with N = 3.67.

Occurrence: In a stratabound deposit of Tl, Pb, Ag, and Cu bearing sulfosalts in meta-dolostone.

Association: Baumhauerite, argentobaumhauerite, hendekasartorite, liveingite, rathite, dufrénoysite.

Distribution: From Lengnabach quarry, Imfeld, Binntal, Canton Wallis, Switzerland.

Name: Prefix, *argento*, indicates the critical role of silver in the structure of a homeotype of *liveingite*.

Type Material: Natural History Museum, Vienna, Austria (H 1715 and N 9868) and the Natural History Museum, Basel, Switzerland (S83).

References: (1) Topa, D., U. Kolitsch, S. Graeser, E. Makovicky, and C. Stanley (2019) Argentoliveingite, Ag_{3+x}Pb_{36-2x}As_{51+x}S₁₁₂ (0 ≤ x < 0.5), a new homeotype of liveingite from Lengnabach, Binntal, Switzerland, and the crystal chemistry of the liveingite group. *Eur. J. Mineral.*, 31, 1079-1097.