

**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. As aggregates of radially arranged tabular-prismatic crystals elongated along [010].

**Physical Properties:** *Cleavage:* Perfect on {001}, {101}, and {100}. *Fracture:* n.d.  
*Tenacity:* Brittle. Hardness = 2.5-3 VHN = 18.2-20.6, 19.6 average (50 g load).  
 D(meas.) = 5.54-5.88 D(calc.) = 5.615

**Optical Properties:** Opaque. *Color:* Grayish black, white in reflected light. *Streak:* Dark gray.  
*Luster:* Metallic.

*Optical Class:* Anisotropism: Weak, metallic blue, mauve to brown rotation tints.

R<sub>1</sub>-R<sub>2</sub>: (480) 33.6-35.6 (18.5-19.9)<sub>oil</sub>, (540) 31.5-33.1 (16.6-17.6)<sub>oil</sub>, (580) 30.3-31.7 (15.5-16.5)<sub>oil</sub>,  
 (660) 28.7-29.8 (14.3-14.9)<sub>oil</sub>

Color values: CIE illuminant C	<i>x</i>	0.297	0.296	0.289	0.287
	<i>y</i>	0.304	0.304	0.296	0.295
	Y%	31.1	32.6	16.3	17.3
	λ <sub>d</sub>	479	479	478	478
	P <sub>e</sub> %	6.1	6.6	10.0	10.7

**Cell Data:** *Space Group:* Pnma. *a* = 8.8221(3) *b* = 3.7728(3) *c* = 14.0076(3) *Z* = 4

**X-ray Powder Pattern:** Pirquitas Ag-Sn deposit, Province Jujuy, northwestern Argentina.  
 4.128 (100), 1.9335 (53), 2.8081 (51), 2.6692 (51), 2.7421 (41), 1.6316 (39), 3.730 (30)

<b>Chemistry:</b>	(1)	(2)
Pb	42.27	48.50
Ag	0.80	0.27
Fe	0.77	0.26
As	1.41	0.21
Sn	30.12	27.74
S	24.23	23.14
Total	99.60	100.11

(1) Pirquitas Ag-Sn deposit, Province Jujuy, northwestern Argentina; average electron microprobe analysis; corresponding to Pb<sub>0.809</sub>Ag<sub>0.29</sub>Fe<sub>0.055</sub>As<sub>0.075</sub>Sn<sub>1.007</sub>S<sub>3</sub>. (2) Do.; average electron microprobe analysis; corresponding to Pb<sub>0.973</sub>Ag<sub>0.010</sub>Fe<sub>0.019</sub>As<sub>0.012</sub>Sn<sub>0.972</sub>S<sub>3</sub>.

**Occurrence:** In a symmetrical banded, hydrothermal vein Ag-Sn deposit.

**Association:** Sphalerite, arsenopyrite, pyrite-marcasite, cassiterite, cylindrite, franckeite, hocartite, rhodostannite.

**Distribution:** From the Pirquitas Ag-Sn deposit, 135 km west of Abra Pampa, Province Jujuy, northwestern Argentina.

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**Type Material:** Institute of Mineralogy, University of Salzburg, Austria (14389-14391) and the Natural History Museum, London, England (BM 1998, 39-40).

**References:** (1) Paar, W.H., R. Miletich, D. Topa, A.J. Criddle, M.K. De Brodtkorb, G. Amthauer, and G. Tippelt (2000) Suredaite, PbSnS<sub>3</sub>, a new mineral species, from the Pirquitas Ag-Sn deposit, NW-Argentina: mineralogy and crystal structure. *Amer. Mineral.*, 85, 1066-1075.