

**Crystal Data:** Orthorhombic, pseudotetragonal. *Point Group:*  $2/m\ 2/m\ 2/m$ . Crystals thin tabular on {001} with nearly square section, to 1 cm; lateral faces striated || their intersection with {001}, and with striations on {001} || [110]. More commonly as massive aggregates of thin, graphitelike folia having irregular edges; warped or bent crystals typical. *Twinning:* Seen only in polished section.

**Physical Properties:** *Cleavage:* Perfect on {001}. *Tenacity:* Flexible, somewhat malleable. Hardness = 1.5 VHN = n.d. D(meas.) = 6.36 D(calc.) = 6.567

**Optical Properties:** Opaque. *Color:* Grayish black, may tarnish dull or iridescent; in polished section, white with slight yellow tint. *Streak:* Black. *Luster:* Metallic. *Pleochroism:* Weak; in white with pale golden tint, and pure white. *Anisotropism:* Distinct to rather high.

$R_1$ – $R_2$ : (400) 39.8–43.7, (420) 40.4–44.0, (440) 41.0–44.3, (460) 41.6–44.4, (480) 42.0–44.5, (500) 42.3–44.4, (520) 42.5–44.3, (540) 42.5–44.1, (560) 42.4–43.8, (580) 42.2–43.5, (600) 41.8–43.1, (620) 41.5–42.6, (640) 41.0–42.2, (660) 40.5–41.7, (680) 40.0–41.3, (700) 39.6–40.9

**Cell Data:** *Space Group:*  $Pbnm$ .  $a = 4.266(3)$   $b = 11.419(7)$   $c = 4.090(2)$   $Z = 2$

**X-ray Powder Pattern:** Montserrat, Bolivia.

2.84 (100), 3.41 (60), 1.419 (50), 3.27 (40), 2.33 (40), 2.03 (40), 1.090 (40)

**Chemistry:**

	(1)	(2)
Pb	52.09	53.13
Fe	0.17	
Sn	30.55	30.43
S	16.91	16.44
Total	[99.72]	100.00

(1) Santa Rosa mine, Bolivia; recalculated after deduction of Zn 1.08% as ZnS. (2) PbSnS<sub>2</sub>.

**Occurrence:** A hydrothermal mineral in tin veins; may be an important ore mineral.

**Association:** Cassiterite, stannite, franckeite, cylindrite, galena, sphalerite, wurtzite, pyrite.

**Distribution:** Found in many Bolivian tin veins, including those of the Santa Rosa [TL], Ichucollo, and El Salvador mines, Montserrat, and the Porvenir mine, Huanuni, Oruro; Mount Cerillos, near Carguaicollo, in the Cordillera de los Frailes, Potosí; the Lipsey Huaico mine, Ocuri; the San Alfredo mine, Colquiri; and the Aliada mine, Colquechaca. In the Ivigtut cryolite deposit, southwestern Greenland. At Radvanice, near Trutnov, Czech Republic. From Sinantscha, Sichota-Alin, and Smirnowsk, Transbaikal, Russia. At the Wallah Wallah mine, Rye Park, New South Wales, Australia. From the Toyoha mine, Hokkaido, Japan. In the Changpo deposit, Dachang district, Guangxi Province, China.

**Name:** To honor Jethro Justinian Harris Teall (1849–1924), Director of the Geological Survey of Great Britain and Ireland.

**Type Material:** n.d.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 439–441. (2) Hofmann, W. (1935) Ergebnisse der Strukturbestimmung komplexer Sulfide. I. Die Struktur von Zinnsulfür SnS und Teallit PbSnS<sub>2</sub>. Zeits. Krist., 92, 161–185 (in German). (3) Mosburg, S., D.R. Ross, P.M. Bethke, and P. Toulmin (1961) X-ray powder data for herzenbergite, teallite, and tin trisulfide. U.S. Geol. Sur. Prof. Paper 424-C, C347–C348. (4) Berry, L.G. and R.M. Thompson (1962) X-ray powder data for the ore minerals. Geol. Soc. Amer. Mem. 85, 75. (5) Ramdohr, P. (1969) The ore minerals and their intergrowths, (3rd edition), 660–662. (6) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 549.

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