

Crystal Data: Orthorhombic. *Point Group:* *mm*2. Crystals short prismatic to tabular [001], to 6 cm, also elongated along [100], with {110} striated parallel to [1 $\bar{1}$ 4]; massive, compact and disseminated. *Twinning:* On {110}, commonly repeated to form pseudo-hexagonal groups; less common on {130}, {100} and {010}, with composition plane {001}.

Physical Properties: *Cleavage:* Imperfect on {010} and {021}. *Fracture:* Subconchoidal. *Tenacity:* Brittle. Hardness = 2–2.5 VHN = n.d. D(meas.) = 6.26 D(calc.) = 6.28–6.32

Optical Properties: Opaque. *Color:* Iron-black; in polished section, pale gray.

Streak: Iron-black. *Luster:* Metallic. *Pleochroism:* Very weak; white to pale pink.

Anisotropism: Strong, in vivid colors.

R_1-R_2 : (400) 32.0–33.0, (420) 32.1–33.2, (440) 32.2–33.4, (460) 31.5–33.2, (480) 30.7–32.6, (500) 30.0–32.0, (520) 29.0–31.3, (540) 28.4–30.6, (560) 28.0–30.2, (580) 27.6–29.8, (600) 27.5–29.6, (620) 27.6–29.6, (640) 27.8–29.5, (660) 28.0–29.2, (680) 28.5–28.7, (700) 28.2–28.2

Cell Data: *Space Group:* *Cmc*2₁. *a* = 7.830–7.837 *b* = 12.450–12.467 *c* = 8.538
Z = 4

X-ray Powder Pattern: Freiberg, Germany.

3.08 (100), 2.58 (90), 2.89 (60), 2.13 (50), 2.19 (40), 1.834 (40), 3.56 (30)

Chemistry:

	(1)	(2)	(3)
Ag	68.65	68.21	68.33
Sb	15.22	15.86	15.42
S	16.02	15.95	16.25
Total	99.89	100.02	100.00

(1) Copiapó, Chile; traces of As and Cu. (2) Cornwall, England; trace of Fe. (3) Ag₅SbS₄.

Occurrence: A late-stage mineral in hydrothermal silver deposits.

Association: Proustite, acanthite, silver, tetrahedrite, galena, sphalerite, pyrite.

Distribution: From many silver mining localities, typically in small amounts, and only rarely in fine specimens. In Germany, at Freiberg [TL], Schneeberg, and Marienberg, Saxony; and as exceptional crystals from St. Andreasberg, Harz Mountains. In Slovakia, at Banská Hodruša and from Banská Štiavnica (Schemnitz). In the Czech Republic, at Jáchymov (Joachimsthal), Příbram, and Třebesko. In Italy, fine twins from Monte Narba, near Sarrabus, Sardinia. In England, as twinned crystals from Wheal Boys, St. Endellion, Cornwall. At Espedalen, Norway. From Azegour, Morocco. At Altyn-Topkan, Tadjikistan. In Canada, in the Cobalt district, Ontario; at United Keno Hill Mines, and fine examples from the Husky mine, Elsa, Yukon Territory. In the USA, in Nevada, as an important ore mineral in the Comstock Lode, Virginia City, Storey Co. In Mexico, large crystals from Arizpe, Sonora; at Guanajuato; from Fresnillo, Zacatecas. At Chañarcillo, south of Copiapó, Atacama, Chile. In Bolivia, from Colquechaca, Potosí. At San Cristobal, Peru. From Broken Hill, New South Wales, Australia.

Name: In honor of the Archduke Victor Stephan (1817–1867), former Mining Director of Austria.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 358–361. (2) Petrunina, A.A., B.A. Maksimov, V.V. Ilyukhin, and N.V. Belov (1969) Crystal structure of stephanite. Doklady Acad. Nauk SSSR, 188, 342–344 (in Russian). (3) Ribár, B. and W. Nowacki (1970) Die Kristallstruktur von Stephanit, [SbS₃][S|Ag₅^{III}]. Acta Cryst., 26, 201–207 (in German). (4) Berry, L.G. and R.M. Thompson (1962) X-ray powder data for the ore minerals. Geol. Soc. Amer. Mem. 85, 122–123. (5) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 535.

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