

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$. As coarse, irregular and foliated masses, to 5 cm, and as grains and veinlets in other sulfides.

Physical Properties: *Cleavage:* Prismatic, good. *Fracture:* Subconchoidal. *Tenacity:* Sectile, malleable. Hardness = 2–2.5 VHN = 22.8–29.7 (100 g load). D(meas.) = 6.82–6.85 D(calc.) = 6.827

Optical Properties: Opaque. *Color:* Pale metallic gray, tarnishes lustrous dark gray, locally to a chalcopyritelike iridescence; pale gray with bluish tint in reflected light. *Streak:* Black. *Luster:* Metallic. *Pleochroism:* Distinct in oil, brownish gray to pure gray. *Anisotropism:* Distinct, in greenish blues and pale green. R₁–R₂: (400) 33.5–34.6, (420) 34.4–34.9, (440) 35.1–34.8, (460) 35.4–34.2, (480) 35.2–33.4, (500) 34.4–32.8, (520) 33.7–32.4, (540) 33.0–31.9, (560) 32.4–31.3, (580) 31.9–30.8, (600) 31.4–30.5, (620) 30.9–30.4, (640) 30.4–30.1, (660) 29.9–29.9, (680) 29.5–29.5, (700) 29.0–29.0

Cell Data: *Space Group:* $I4_1/amd$. $a = 8.663(0.8)$ $c = 11.743(1)$ $Z = 8$

X-ray Powder Pattern: Boulder Co., Colorado, USA. 2.345 (100), 2.794 (90), 2.740 (80), 2.422 (80), 2.114 (70), 4.298 (60), 2.006 (60)

Chemistry:	(1)	(2)	(3)
Ag	71.51	71.7	71.71
Cu	13.12	14.05	14.08
Fe	0.79		
S	14.36	[14.2]	14.21
Total	99.78	[100.0]	100.00

(1) Jalpa, Mexico. (2) Silver Plume, Colorado, USA; average of four analyses, S by difference. (3) Ag₃CuS₂.

Occurrence: Formed under low-temperature (below 117 °C) hydrothermal conditions.

Association: Acanthite, mckinstryite, galena, sphalerite, pyrite, chalcopyrite, stromeyerite, polybasite, pearceite, tetrahedrite–tennantite, silver.

Distribution: In Mexico, at the La Leonora mine, Jalpa, Zacatecas [TL], and at La Mesa, Chihuahua. In the USA, in Colorado, at the Payrock mine, Silver Plume, Clear Creek Co.; the Bulldog Mountain mine, Creede, Mineral Co.; the Hock Hocking mine, near Alma, Park Co.; also from Boulder Co., at the E.C. Hite mine, and the Caribou mine, near Nederland. From the Savage and Yellow Jacket mines, Comstock district, Storey Co., Nevada; at Mogollon, Catron Co., New Mexico. From Kongsberg, Norway. In France, at Barreins, Aude. From Bohutin, near Příbram, and in the Vrancea deposit, Czech Republic. In the Zlata Bana deposit, Slanske vrchy Mountains, Slovakia. From Keel, Aedagh, Co. Longford, Ireland. At Boarezzo, Lombardy, Italy. In the ??S?? Zavodinskii mine, near Ziryanovsk, Altai Mountains, Kazakhstan. From the Sado mine, Niigata Prefecture, and the Koryu mine, Hokkaido, Japan. In Australia, from Broken Hill, New South Wales. A number of additional localities have lately been recognized.

Name: For the Mexican locality at Jalpa.

Type Material: Mining Academy, Freiberg, Germany, 4705; National School of Mines, Paris, France.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 176–178 ("argentite", part). (2) Johan, Z. (1967) Etude de la jalpaite. Acta Univ. Carolinae, Geol., 2, 113–122 (in French). (3) (1968) Amer. Mineral., 53, 1778 (abs. ref. 2). (4) Grybeck, D. and J.J. Finney (1968) New occurrences of and data for jalpaite. Amer. Mineral., 53, 1530–1542. (5) Baker, C.L., F.A. Lincoln, and A.W.S. Johnson (1992) Crystal structure determination of Ag₃CuS₂ from powder X-ray diffraction data. Austr. J. Chem., 45, 1441–1449. (6) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 266.

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