

Crystal Data: Orthorhombic. *Point Group:* *mm*2. Tabular on {001}; also prismatic by elongation of [001]; crystals up to 15 cm. Prism zone typically deeply striated || [001]. *Twinning:* Twin plane {320} common, rarely as interpenetrating pseudohexagonal trillings.

Physical Properties: *Cleavage:* Perfect on {110}, distinct on {100} and {010}, indistinct on {001}. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 3 VHN = n.d. D(meas.) = 4.45 D(calc.) = 4.40

Optical Properties: Opaque. *Color:* Grayish black to iron-black; in polished section, gray to pale pink-brown, deep red internal reflections may be observed. *Streak:* Grayish black. *Luster:* Metallic to dull. *Pleochroism:* Weak. *Anisotropism:* Very strong, dark violet-red or olive-green tones.

R₁–R₂: (400) 24.8–26.2, (420) 26.6–26.0, (440) 26.5–25.6, (460) 26.5–25.9, (480) 26.2–25.8, (500) 25.6–25.6, (520) 24.9–25.3, (540) 24.4–25.2, (560) 24.0–25.2, (580) 23.8–25.4, (600) 23.8–25.9, (620) 24.1–26.5, (640) 24.6–26.9, (660) 25.2–26.9, (680) 25.6–26.8, (700) 25.7–26.7

Cell Data: *Space Group:* *Pmn*2₁. *a* = 7.407(1) *b* = 6.436(1) *c* = 6.154(1) *Z* = 2

X-ray Powder Pattern: Butte, Montana, USA (shows preferred orientation on [hk0]). 3.219 (100), 3.208 (100), 2.846 (83), 1.8567 (72), 1.8514 (62), 1.7285 (48), 3.076 (41)

Chemistry:

	(1)	(2)	(3)
Cu	47.96	49.8	48.42
Fe	1.22		
Zn	0.57		
Sb		1.0	
As	18.16	18.8	19.02
S	32.21	32.3	32.56
Total	100.12	101.9	100.00

(1) Cerro Blanco, Chile. (2) Bor, Serbia; by electron microprobe. (3) Cu₃AsS₄.

Polymorphism & Series: Dimorphous with luzonite.

Occurrence: In hydrothermal vein deposits formed at medium temperatures. Also as a late-stage mineral in low-temperature deposits.

Association: Pyrite, sphalerite, galena, bornite, tetrahedrite–tennantite, chalcocite, covellite, barite, quartz.

Distribution: A widespread mineral, may be an important ore of copper, but not commonly well-crystallized. Only a few localities can be mentioned. In Peru, from Morococha [TL] and Cerro de Pasco, with exceptional crystals from the Mina Luz Angelica, Quiruvilca. In Argentina, in the Sierra de Famatina, La Rioja Province. In the Philippine Islands, at Mancayan, Luzon. From the Chinkuashi mine, Keelung, Taiwan. At Kaize-mura, Nagano Prefecture, and in the Teine mine, Hokkaido, Japan. In the USA, in splendid crystals from Butte, Silver Bow Co., Montana; in Utah, in the Tintic district, Juab Co.; in Colorado, in fine specimens from a number of mines in the Red Mountain district, San Juan Co. In Austria, at Matzenköpfl, Brixlegg, Tirol. From Bor, Serbia. In Italy, on Sardinia, at Alghero and Calabona. At Tsumeb, Namibia.

Name: From the Greek for *distinct*, in allusion to its cleavage.

Type Material: Mining Academy, Freiberg, Germany, 6929.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 389–391. (2) Adiwidjaja, G. and J. Löhn (1970) Strukturverfeinerung von Enargit, Cu₃AsS₄. Acta Cryst., 26, 1878–1879 (in German with English abs.). (3) Pósfai, M. and M. Sundberg (1998) Stacking disorder and polytypism in enargite and luzonite. Amer. Mineral., 83, 365–372. (4) NBS. Mono. 25, 21, 68. (5) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 155.

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