

Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. Crystals commonly cubic, octahedral, or dodecahedral, to 2 cm; in parallel groups; more commonly as elongated, wiry, arborescent, or reticulated forms. Massive, in scales, sheets, and as coatings. *Twining:* On {111} as simple pairs and repeated in aggregates radiating along [111] axes.

Physical Properties: *Fracture:* Hackly. *Tenacity:* Ductile, malleable. Hardness = 2.5–3 VHN = 60–65 (100 g load). D(meas.) = 10.1–11.1 (10.5 when pure). D(calc.) = 10.497

Optical Properties: Opaque. *Color:* Silver-white, tarnishes gray to black; in polished section, brilliant silver-white. *Streak:* Silver-white. *Luster:* Metallic.

R: (400) 83.4, (420) 84.5, (440) 86.0, (460) 87.7, (480) 89.1, (500) 90.5, (520) 91.8, (540) 93.0, (560) 93.5, (580) 93.7, (600) 94.0, (620) 94.4, (640) 94.7, (660) 95.2, (680) 95.6, (700) 96.0

Cell Data: *Space Group:* $Fm\bar{3}m$. $a = 4.0862$ $Z = 4$

X-ray Powder Pattern: Synthetic.

2.359 (100), 2.044 (40), 1.231 (26), 1.445 (25), 0.9375 (15), 1.8341 (13), 0.9137 (12)

Chemistry:

	(1)
Ag	98.450
Au	0.004
Cu	0.011
Fe	0.024
Hg	1.130
Sb	0.581
Total	100.200

(1) Kongsberg, Norway.

Polymorphism & Series: Forms a series with gold; the cubic form is 3C; hexagonal stacking polytypes 2H and 4H are known.

Occurrence: A primary hydrothermal mineral, also formed by secondary processes, especially in the oxidized portions of mineral deposits.

Association: Acanthite, chlorargyrite, embolite, silver sulfosalts, gold, copper.

Distribution: Numerous localities even for fine specimens. Well-crystallized examples from: in Germany, near Freiberg and Marienberg, Saxony, and at St. Andreasberg, Harz Mountains. Exceptionally developed at Kongsberg, Norway. From Příbram and Jáchymov (Jochimsthal), Czech Republic. In Italy, from Monte Narba, Sarrabus, Sardinia. In the USA, on the Keweenaw Peninsula, Houghton and Keweenaw Cos., Michigan; at Aspen, Pitkin Co., and from Creede, Mineral Co., Colorado; and in Arizona, in the Silver King mine, Pinal Co. In Canada, in large amounts from Cobalt; and in the Thunder Bay district, at Silver Islet, on the north shore of Lake Superior, Ontario. Important production from Mexico, in many states; finely crystallized from Batopilas, Chihuahua; masses over 1500 kg from Arizonac, Sonora. At Chañarcillo, south of Copiapó, Atacama, Chile. In Australia, at Broken Hill, New South Wales.

Name: From an Old English word for the metal *soelfer*, related to the German *silber* and the Dutch *zilver*; the chemical symbol from the Latin *argentum*.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 96–99. (2) Ewald, P.P. and C. Hermann, Eds. (1931) Silber, Ag. Strukturbereich, 1, 36–38 (in German). (3) Novgorodova, M.I., A.I. Gorshkov, and A.V. Mokhov (1979) Native silver and its new structural modifications. Zap. Vses. Mineral. Obshch., 108, 552–563 (in Russian). (4) (1953) NBS Circ. 539, 1, 23. (5) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 511.

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