

Crystal Data: Orthorhombic. *Point Group:* 222. As acicular to prismatic [001] crystals, dominated by {110}, {120} and {101}, typically striated or rounded, to 2 cm; also wedgelike and tabular on {010}; as powdery crusts and massive films.

Physical Properties: *Fracture:* Conchoidal. Hardness = 2–2.5 D(meas.) = 3.35 D(calc.) = [3.35]

Optical Properties: Transparent. *Color:* Bright blue; pale blue in transmitted light. *Luster:* Vitreous.

Optical Class: Biaxial (-). *Pleochroism:* X = pale blue; Y = Z = darker blue. *Orientation:* X = a; Y = c; Z = b. *Dispersion:* r < v or r > v, strong. α = 1.710(3) β = 1.732(3) γ = 1.732(3) 2V(meas.) = 0°–30°

Cell Data: *Space Group:* P2₁2₁2₁. a = 6.674(2) b = 9.161(1) c = 7.398(3) Z = 4

X-ray Powder Pattern: Eagle shaft, Saskatchewan, Canada. 5.39 (10), 4.94 (9), 3.35 (8), 3.77 (7), 3.04 (7), 2.528 (7), 2.883 (6)

Chemistry:	(1)	(2)
SeO ₂	48.12	48.98
CuO	35.40	35.11
H ₂ O	15.30	15.91
Total	98.82	100.00

(1) Cerro de Cacheuta, Argentina. (2) CuSeO₃·2H₂O.

Polymorphism & Series: Dimorphous with clinochalcomenite.

Occurrence: A rare secondary mineral in oxidized Cu–Se-bearing deposits.

Association: Umangite, clausthalite, molybdomenite, schmiederite (Cerro de Cacheuta, Argentina); penroseite, cobaltomenite, molybdomenite (Hiaco mine, Bolivia); allophane, basaluminite, malachite, clinochalcomenite (El Dragón mine, Bolivia).

Distribution: In Argentina, from Cerro de Cacheuta, Mendoza Province, and at the Cónдор mine, Los Llantenes district, Sierra de Cacheuta, in the Sierra de Umango and Sierra de Famatina, La Rioja Province. In Bolivia, at the Pacajake mine, Hiaco, 24 km east-northeast of Colquechaca, and in the El Dragón mine, 30 km southwest of Cerro Rico de Potosí, Potosí. From the Eagle shaft, Beaverlodge Lake, near Uranium City, Saskatchewan, Canada. In the USA, from the Middlemarch mine, near Pearce, Cochise Co., Arizona; at Majuba Hill, Pershing Co., Nevada; and on the Bozo No. 1 claim, Skull Creek, Moffat Co., Colorado. From the Moctezuma (Bambolla) mine, 12 km south of Moctezuma, Sonora, Mexico. At the Trogtal quarry, near Lautenthal, Harz Mountains, Germany. Large crystals from the Baccu Locci mine, near Villaputzu, Sarrabus district, Sardinia, Italy. At Ballybunion, Co. Kerry, Ireland. From Wheal Cock and the Botallack mine, St. Just, Cornwall, England. At Liauzun-en-Olloix, Puy-de-Dôme, France. From Skrikerum, near Tryserum, Kalmar, Sweden. From the Musonoi, Kakanda, and Kambove West mines, Katanga Province, Congo (Shaba Province, Zaire).

Name: From the Greek for *copper* and *moon*.

Type Material: Natural History Museum, Paris, France, 81.14; Harvard University, Cambridge, Massachusetts, USA, 101210.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 638–639. (2) Robinson, P.D., P.K. Sen Gupta, G.H. Swihart, and L. Houk (1992) Crystal structure, H positions, and the Se lone pair of synthetic chalcomenite, Cu(H₂O)₂[SeO₃]. *Amer. Mineral.*, 77, 834–838. (3) Mandarino, J.A. (1964) X-ray powder data for teineite and chalcomenite. *Amer. Mineral.*, 49, 1481–1485.

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