

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Crystals are tabular on {010} and slightly elongated along [001], to several mm; typically in crystalline incrustations.

Physical Properties: Hardness = 3.5 D(meas.) = 3.65(5) D(calc.) = 3.89 Soluble in H₂O; very hygroscopic, altering to chalcantite.

Optical Properties: Transparent to translucent. *Color:* Pale green, pale brown, pale yellow, sky-blue; colorless in transmitted light.

Optical Class: Biaxial (-). *Orientation:* $X = b$; $Y = a$; $Z = c$. *Dispersion:* $r > v$, extreme. $\alpha = 1.724(3)$ $\beta = 1.733(3)$ $\gamma = 1.739(3)$ $2V(\text{meas.}) = \text{Large}$.

Cell Data: *Space Group:* $Pnmb$. $a = 6.709(1)$ $b = 8.409(1)$ $c = 4.833(1)$ $Z = 4$

X-ray Powder Pattern: Synthetic.

3.549 (100), 2.62 (95b), 4.187 (75), 2.42 (50b), 1.775 (30), 1.433 (20), 1.430 (18)

Chemistry:

	(1)	(2)
SO ₃	50.30	50.16
CuO	49.47	49.84
Total	99.77	100.00

(1) Vesuvius, Italy. (2) CuSO₄.

Occurrence: As sublimes near volcanic fumaroles.

Association: Dolerophanite, melanothallite, eriochalcite, euchlorine (Vesuvius, Italy); euchlorine, eriochalcite, dolerophanite, melanothallite, piypite, ponomarevite, cotunnite, sofiite, fedotovite, tenorite (Tolbachik volcano, Russia); stoiberite, shcherbinaite, ziesite, bannermanite, chalcantite (Izalco volcano, El Salvador).

Distribution: From Mount Vesuvius, Campania, Italy. At the Tolbachik fissure volcano, Kamchatka Peninsula, Russia. On Izalco volcano, El Salvador.

Name: From the Greek for *copper* and *azure-blue*, in allusion to the composition and color change caused by hydration.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 429–430. (2) Wildner, M. and G. Giester (1988) Crystal structure refinements of synthetic chalcocyanite (CuSO₄) and zincosite (ZnSO₄). Mineral. Petrol., 39, 201–209. (3) (1964) NBS Mono. 25, 3, 29.