

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As lichenlike aggregates of crystals elongated along [001]; as grooved spires, to 5 mm, often bent or curving; as woollike aggregates. *Twinning:* On {021}, as penetration twins.

Physical Properties: *Cleavage:* Perfect on {110}; good on {001}. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 2.5 D(meas.) = 2.4 D(calc.) = 2.516 Easily soluble in H₂O.

Optical Properties: Transparent. *Color:* Bluish green to greenish blue, sometimes with a yellowish tint; greenish blue in transmitted light. *Luster:* Vitreous.

Optical Class: Biaxial (+). *Pleochroism:* X = pale green; Y = pale olive-green; Z = pale blue. *Orientation:* X = b; Y = c; Z = a. *Dispersion:* $r < v$, strong. $\alpha = 1.646$ $\beta = 1.685$ $\gamma = 1.745$ $2V(\text{meas.}) = 75^\circ$

Cell Data: *Space Group:* $Pbmn$. $a = 7.38$ $b = 8.04$ $c = 3.72$ $Z = 2$

X-ray Powder Pattern: Synthetic.

5.476 (100), 2.638 (82), 4.050 (56), 3.093 (40), 2.2088 (29), 1.6048 (23), 2.0240 (22)

Chemistry:

	(1)	(2)
Fe ₂ O ₃	0.20	
Cu	36.89	37.28
MgO	0.04	
CaO	0.15	
Cl	40.68	41.59
H ₂ O	20.81	21.13
insol.	0.95	
Total	99.72	100.00

(1) Quetena, Chile. (2) CuCl₂•2H₂O.

Occurrence: As an encrustation around fumaroles (Vesuvius, Italy); a product of weathering in a copper sulfide deposit in an arid climate (Quetena, Chile).

Association: Melanothallite, euchlorine, chalcocyanite, dolerophanite (Vesuvius, Italy); atacamite, bandylite (Quetena, Chile); euchlorine, chalcocyanite, dolerophanite, melanothallite, tenorite, tolbachite (Tolbachik volcano, Russia).

Distribution: On Vesuvius, Campania, Italy. From the Tolbachik fissure volcano, Kamchatka Peninsula, Russia. At Quetena, west of Calama, Antofagasta, Chile. From near Hawthorne, Mineral Co., Nevada, USA. At the Mt. Gunson copper mine, Stuart Shelf, and Moonta, South Australia.

Name: From the Greek for *wool* and *copper*, for the form of aggregates at Vesuvius, Italy.

Type Material: Harvard University, Cambridge, Massachusetts, USA, 97927.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 44–46. (2) Brownstein, S., N.F. Han, E. Gabe, and Y. LePage (1989) A redetermination of the crystal structure of cupric chloride dihydrate. *Zeits. Krist.*, 189, 13–15. (3) (1981) NBS Mono. 25, 18, 33.