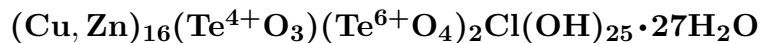


Tlalocite

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Crystal Data: Orthorhombic. *Point Group:* n.d. As velvety crusts composed of spherules or arcuate bands of subparallel lath-shaped crystals, to 10 μm .

Physical Properties: *Tenacity:* Gummy and sectile. Hardness = 1 D(meas.) = 4.55(1) D(calc.) = 4.58

Optical Properties: Semitransparent. *Color:* Capri blue; pale green in transmitted light.

Streak: Very pale blue.

Optical Class: Biaxial (-). *Pleochroism:* X = green; Y = Z = bluish green. *Absorption:* Z > Y > X. $\alpha = 1.758(2)$ $\beta = 1.796(2)$ $\gamma = 1.810(5)$ 2V(meas.) = 64° 2V(calc.) = 61°

Cell Data: *Space Group:* n.d. $a = 16.780(3)$ $b = 19.985(4)$ $c = 12.069(3)$ Z = 4

X-ray Powder Pattern: Bambollita mine, Mexico.

16.787 (10), 4.201 (10), 8.394 (8), 3.355 (6), 1.560 (5), 2.796 (3), 2.588 (3b)

Chemistry:

	(1)
TeO ₃	15.0
TeO ₂	6.1
CuO	31.0
ZnO	19.3
Cl	1.3
H ₂ O	27.7
-O = Cl ₂	0.3
Total	100.1

(1) Bambollita mine, Mexico; results from several partial analyses, CuO and ZnO by AA, Te and Cl by spectrophotometry, H₂O by gravimetry; corresponds to Cu_{9.92}Zn_{6.03}(Te⁴⁺O₃)_{0.97}(Te⁶⁺O₄)_{2.17}Cl_{0.93}(OH)_{24.69}•26.78H₂O.

Occurrence: Very rare in partially oxidized portions of a tellurium-bearing polymetallic hydrothermal sulfide vein.

Association: Tenorite, azurite, malachite.

Distribution: From the Oriental (Bambollita) mine, northeast of the Moctezuma (Bambolla) mine, 12 km south of Moctezuma, Sonora, Mexico.

Name: For *Tlaloc*, the Toltec and Aztec god of rain, in allusion to the high essential water content.

Type Material: Natural History Museum, Paris; National School of Mines, Paris, France; The Natural History Museum, London, England; Harvard University, Cambridge, Massachusetts, 119091; National Museum of Natural History, Washington, D.C., USA, 135057.

References: (1) Williams, S.A. (1975) Xocomecatlite, Cu₃TeO₄(OH)₄, and tlalocite, Cu₁₀Zn₆(TeO₃)(TeO₄)₂Cl(OH)₂₅•27H₂O, two new minerals from Moctezuma, Sonora, Mexico. *Mineral. Mag.*, 40, 221–226. (2) (1976) *Amer. Mineral.*, 61, 504 (abs. ref. 1). (3) Roberts, A.C. (1978) An orthorhombic cell for tlalocite. *Geol. Surv. Can. Paper* 78–1C, 104.