

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Individual crystals are bladelike, elongated along [100] and flattened on [010], in rosettes, to 2 mm, and in scales and tufts; may be aggregated into nodules and crusts.

Physical Properties: *Cleavage:* On {100}. *Tenacity:* Plastic. *Hardness* = ~ 1
D(meas.) = 6.878 (synthetic). D(calc.) = 6.916 Radioactive.

Optical Properties: Semitransparent. *Color:* Colorless, pale straw-yellow, pale yellow.
Luster: Pearly.

Optical Class: Biaxial (-). *Orientation:* $X = c; Y = b; Z = a$. $\alpha = \text{n.d.}$ $\beta = 2.05$ $\gamma = > 2.11$
 $2V(\text{meas.}) = \sim 75^\circ$

Cell Data: *Space Group:* $P2_1ab$ (synthetic). $a = 7.860(4)$ $b = 10.089(2)$ $c = 5.363(2)$
 $Z = 4$

X-ray Powder Pattern: Synthetic.
3.682 (10), 5.35 (9), 3.099 (9), 4.73 (8), 3.170 (8), 1.971 (7), 1.549 (6)

Chemistry: (1) Identification depends on coincidence of the X-ray powder pattern with synthetic material, and the presence of uranium and tellurium.

Occurrence: In the oxidized zone of a hydrothermal Au–Te deposit (Moctezuma mine, Mexico); in the oxidized zone of a uranium deposit (Shinkolobwe, Congo).

Association: Emmonsite, mackayite, cuztците, eztlite, “limonite” (Moctezuma mine, Mexico); uraninite, siegenite, vaesite (Shinkolobwe, Congo).

Distribution: From the Moctezuma (Bambolla) mine, 12 km south of Moctezuma, and at the San Miguel prospect, 10 km northwest of the Moctezuma mine, Sonora, Mexico. From Shinkolobwe, Katanga Province, Congo (Shaba Province, Zaire).

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Type Material: Mexican Institute of Geology, National University of Mexico, Mexico City, Mexico; Natural History Museum, Paris, France, 175.80; National Museum of Natural History, Washington, D.C., USA, 120247, 122475, 164351.

References: (1) Gaines, R.V. (1971) Schmitterite – a new uranyl tellurite from Moctezuma, Sonora. *Amer. Mineral.*, 56, 411–415. (2) Meunier, G. and J. Galy (1973) Structure cristalline de la schmitterite synthétique UTeO_5 . *Acta Cryst.*, 29, 1251–1255 (in French with English abs.).