

Crystal Data: Monoclinic. *Point Group:* $2/m$. Bladelike crystals, to 2 mm, flattened on {100}, in subparallel sheaves and rosettes.

Physical Properties: Hardness = ~ 3 D(meas.) = 3.95(1) D(calc.) = 4.18

Optical Properties: Transparent. *Color:* Dark yellowish green. *Luster:* Vitreous.
Optical Class: Biaxial (-). $\alpha = 2.018(3)$ $\beta = 2.023(3)$ $\gamma = 2.025(3)$ $2V(\text{meas.}) = 20^\circ\text{--}25^\circ$

Cell Data: *Space Group:* $P2_1/c$. $a = 10.984(2)$ $b = 10.268(1)$ $c = 7.917(2)$
 $\beta = 108.49(2)^\circ$ $Z = 8$

X-ray Powder Pattern: Moctezuma mine, Mexico.
10.4 (10), 4.66 (8), 3.110 (8), 3.290 (7), 3.66 (6), 5.18 (5), 3.035 (5)

Chemistry:	(1)	(2)
TeO ₂	52.5	59.90
Fe ₂ O ₃	27.9	29.96
H ₂ O	18.2	10.14
Total	98.6	100.00

(1) Moctezuma mine, Mexico; H₂O taken as loss on ignition. (2) FeTeO₃(OH)•H₂O.

Occurrence: A very rare mineral in the oxide zone of a hydrothermal Au–Te ore deposit (Moctezuma mine, Mexico).

Association: Emmonsite, anglesite, “limonite”, quartz (Moctezuma mine, Mexico); emmonsite (Mohawk mine, Nevada, USA); rodalquilarite, emmonsite, jarosite, limonite (Tombstone, Arizona, USA).

Distribution: From the Moctezuma (Bambolla) mine, 12 km south of Moctezuma, Sonora, Mexico. In the USA, in the Mohawk mine, Goldfield, Esmeralda Co., Nevada; from the Joe shaft, near Tombstone, Cochise Co., Arizona; in the Wilcox district, Catron Co., New Mexico; in Colorado, at the Good Hope mine, Vulcan district, Gunnison Co., and the Hoosier mine, Cripple Creek district, Teller Co.

Name: For the state of Sonora, Mexico, in which the mineral was first found.

Type Material: The Natural History Museum, London, England, 1967,390; National Museum of Natural History, Washington, D.C., USA, 119271, 164343, 164344.

References: (1) Gaines, R.V., G. Donnay, and M.H. Hey (1968) Sonoraite. *Amer. Mineral.*, 53, 1828–1832. (2) Donnay, G., J.M. Stewart, and H. Preston (1970) The crystal structure of sonoraite, Fe³⁺Te⁴⁺O₃(OH)•H₂O. *Tschermaks Mineral. Petrog. Mitt.*, 14, 27–44.