Cuzticite \( \text{Fe}_2^3\text{Te}_6^6\text{O}_{6}\cdot3\text{H}_2\text{O} \)

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Crystal Data: Hexagonal.  
Point Group: n.d.  
Minute scales, aggregated in warty to stalactitic crusts.

Physical Properties:  
Hardness = 3, on compact material.  
D(meas.) = 3.9  
D(calc.) = 4.01

Optical Properties:  
Semitransparent.  
Color: Yellow to brown; dark yellow in thin section.  
Optical Class: Uniaxial (−).  \( \omega = 2.06 \  \epsilon = 2.05 \)

Cell Data:  
Space Group: n.d.  
\( a = 5.045 \  c = 14.63 \  Z = 2 \)

X-ray Powder Pattern:  
Moctezuma mine, Mexico.  
3.256 (10), 2.518 (7), 4.871 (4), 2.239 (3), 1.564 (3), 1.457 (3), 1.994 (2)

Chemistry:  
\[
\begin{array}{ccc}
\text{TeO}_3 & 45.1 & 45.10 \\
\text{TeO}_2 & \text{trace} & \text{trace} \\
\text{Fe}_2\text{O}_3 & 41.1 & 41.02 \\
\text{Mn}_3\text{O}_4 & \sim0.4 & \sim0.4 \\
\text{PbO} & 0.0 & 0.0 \\
\text{H}_2\text{O} & 13.6 & 13.88 \\
\hline
\text{Total} & 100.2 & 100.00
\end{array}
\]

(1) Moctezuma mine, Mexico; average of three analyses, total Mn as Mn\(^{3+}\), H\(_2\)O by the Penfield method on a separate sample.  
(2) Fe\(_2\)TeO\(_6\) • 3H\(_2\)O.

Occurrence: Very rare in oxidized ore in a matrix of intensely silicified and brecciated rhyolite vitrophyre cemented by drusy quartz and carrying pyrite and tellurides.

Association: Eztlite, emmonsite, schmitterite, kuranakhite, pyrite.

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

Name: From the Nahua language for something yellow, in allusion to the color.


References:  