Cuzticite

\[ \text{Fe}_{2}^{3+} \text{Te}_{6}^{6+} \text{O}_{6} \cdot 3\text{H}_{2}\text{O} \]

\( \odot 2001-2005 \) Mineral Data Publishing, version 1


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 (–). \( \omega = 2.06 \quad \epsilon = 2.05 \)

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

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:

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

(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.
