Jixianite \( \text{Pb(W, Fe}^{3+} \text{)}_2(\text{O, OH})_7 \)

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Crystal Data: Cubic. \textbf{Point Group: } \text{4/m 3 2/m}. Very rarely as octahedra, to 160 \( \mu \text{m}; \) commonly microcrystalline or granular, in honeycomb and crustlike aggregates.

Physical Properties: Hardness = \( \sim 3 \) D(meas.) = 6.04 \( \text{D(calc.)} = 7.89 \) Weakly magnetic.

Optical Properties: Transparent. \textbf{Color:} Red to brownish red; in reflected light, yellowish brown or greenish yellow. \textbf{Streak:} Yellow. \textbf{Luster:} Resinous, strong. \textbf{Optical Class:} Isotropic; may show weak anisotropism. \( n = 2.262-2.315 \)

Cell Data: \textbf{Space Group: } \text{Fd\textbar{3}m}. \( a = 10.3594(6) \) \( Z = 8 \)

X-ray Powder Pattern: Jixian, China.
2.982 (10), 1.833 (8), 1.562 (7), 2.585 (6), 5.97 (5), 1.189 (5), 1.159 (5)

Chemistry:

\[
\begin{array}{ccc}
\text{Chemical} & \text{Composition} & \text{Formula} \\
\text{WO}_3 & 50.39 & 50.13 \\
\text{MoO}_3 & 0.01 & \\
\text{Fe}_2\text{O}_3 & 6.53 & \\
\text{FeO} & 0.71 & 8.86 \\
\text{CuO} & 0.27 & \text{trace} \\
\text{PbO} & 38.72 & 40.15 \\
\text{MgO} & 0.20 & \\
\text{H}_2\text{O}^+ & 3.68 & \\
\text{Total} & 100.51 & 99.14 \\
\end{array}
\]

(1) Jixian, China; after deduction of wulfenite, corresponds to \( \text{Pb}_{1.14}\text{Fe}^{2+}_{0.07}\text{Cu}_{0.02}\Sigma=1.23 \)
\( \text{W}_{1.44}\text{Fe}^{3+}_{0.54}\text{Mg}_{0.03}\Sigma=2.00[\text{O}_{6.00}(\text{OH})_{0.72}]\Sigma=6.72 \times 0.98\text{H}_2\text{O} \).

(2) Do.; by electron microprobe, total Fe as FeO.

Occurrence: In the oxidized zone of hypothermal to mesothermal tungsten-bearing quartz veins peripheral to a quartz monzonite stock.

Association: Bismuthinite, quartz, wolframite, cassiterite, pyrite, chalcopyrite, scheelite, wulfenite, stolzite, silver, copper.

Distribution: In the Pan-shan stock, Jixian, Hebei Province, China.

Name: For the locality at Jixian, China.
