Yeatmanite

\[ \text{Mn}^{2+}_{9} \text{Zn}_{6} \text{Sb}^{5+}_{2} \text{Si}_{4} \text{O}_{28} \]

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Crystal Data: Triclinic. \textit{Point Group}: \( \overline{1} \). As euhedral crystals, typically lath-shaped, rarely pseudohexagonal by twinning; as warped foliae. \textit{Twinning}: Multiple lamellar on \{010\}; also on \{023\}.

Physical Properties: \textit{Cleavage}: Perfect on \{100\}. \textit{Tenacity}: Brittle. \textit{Hardness} = 4
\[ D(\text{meas.}) = 5.02 \quad D(\text{calc.}) = 5.04 \]

\textit{Optical Class}: Biaxial (-). \textit{Orientation}: \( X \perp \{100\} \) cleavage. \textit{Dispersion}: \( r > v \), distinct.
\[ \alpha = 1.864(4) \quad \beta = 1.895(4) \quad \gamma = 1.905(2) \]
\[ 2V(\text{meas.}) = 52^\circ \quad 2V(\text{calc.}) = 59^\circ \]

Cell Data: \textit{Space Group}: \( P\overline{1} \). \[a = 5.604(2) \quad b = 11.602(7) \quad c = 9.058(4) \]
\[ \alpha = 92.10(3)^\circ \quad \beta = 100.54(2)^\circ \quad \gamma = 77.18(5)^\circ \quad Z = 1 \]

X-ray Powder Pattern: Franklin, New Jersey, USA.

2.969 (100), 2.782 (60), 2.587 (60), 2.474 (60), 1.605 (60), 2.547 (40), 2.146 (40)

Chemistry:
\[
\begin{align*}
\text{SiO}_2 & \quad 14.7 \\
\text{Sb}_2\text{O}_5 & \quad 18.9 \\
\text{FeO} & \quad 1.0 \\
\text{MnO} & \quad 37.8 \\
\text{ZnO} & \quad 29.1 \\
\text{MgO} & \quad 0.0 \\
\text{Total} & \quad 101.5
\end{align*}
\]

(1) Franklin, New Jersey, USA; by electron microprobe, corresponds to \( \text{Mn}_{8.89}\text{Zn}_{5.97}\text{Sb}_{1.95}\text{Fe}_{0.23} \text{Si}_{4.08}\text{O}_{28} \).

Occurrence: In veins in massive granular ore in a metamorphosed stratiform zinc deposit.

Association: Sarkinite, willemite, calcite, diopside, andradite, roméite.

Distribution: From Franklin, Sussex Co., New Jersey, USA.

Name: For Pope Yeatman (1861–1953), mining engineer at Franklin, New Jersey, USA.

Type Material: National School of Mines, Paris, France; Harvard University, Cambridge, Massachusetts, 92878; National Museum of Natural History, Washington, D.C., USA, C6290.


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