Mathewrogersite \( \text{Pb}_7(\text{Fe}^{2+}, \text{Cu})\text{Al}_3\text{Ge}_{12}\text{Si}_{12}\text{O}_{36}(\text{OH}, \text{H}_2\text{O})_6 \)

Crystal Data: Hexagonal. Point Group: \( 3, 3', 32, 3m, \) or \( 3 2/m \). As platy, six-sided crystals, to 0.3 mm, flattened on \{0001\}. Also as radiating groups, to < 1 mm, of intergrown blades and scales.

Physical Properties: Cleavage: Perfect on \{0001\}. Hardness = \( \approx 2 \) D(meas.) = 4.7 D(calc.) = 4.76


Cell Data: Space Group: \( R3, R32, R3m, \) or \( R3 2/m \). \( a = 8.457(2) \) \( c = 45.970(22) \) \( Z = 3 \)

X-ray Powder Pattern: Tsumeb, Namibia.

3.257 (100), 15.30 (70), 2.030 (70), 7.68 (60), 2.766 (60), 1.762 (60), 4.08 (50)

Chemistry:

\[
\begin{array}{ll}
\text{SiO}_2 & 26.2 \\
\text{GeO}_2 & 3.9 \\
\text{Al}_2\text{O}_3 & 5.9 \\
\text{FeO} & 1.7 \\
\text{CuO} & 0.8 \\
\text{PbO} & 57.5 \\
\text{MgO} & 0.1 \\
\text{H}_2\text{O} & 1.9 \\
\hline
\text{Total} & 98.0 \\
\end{array}
\]

(1) Tsumeb, Namibia; by electron microprobe, \( \text{H}_2\text{O} \) estimated by elemental analyzer; corresponds to \( \text{Pb}_{7.08}(\text{Fe}_{0.05}\text{Cu}_{0.28}\text{Mg}_{0.07})\Sigma = 1.00 \text{Al}_{3.13}\text{Ge}_{1.03}\text{Si}_{12}\text{O}_{41.81}\text{H}_{5.81} \).

Occurrence: In cavities of corroded Pb-Zn ores in the lower oxidation zone of a polymetallic mineral deposit.

Association: Queitite, alamosite, melanotekite, kegelite, larsenite, schaurteite, anglesite, willemite, leadhillite, mimetite.

Distribution: From Tsumeb, Namibia.

Name: To honor Mathew Rogers, the first European prospector at Tsumeb, Namibia.

Type Material: University of Stuttgart, Stuttgart, Germany, NM15; National Museum of Natural History, Washington, D.C., USA.