Mengeite

\[ \text{Ba(Mg, Mn}^{2+})\text{Mn}^{3+}4(\text{PO}_4)_4(\text{OH})_4 \cdot 4\text{H}_2\text{O} \]

Crystal Data: Triclinic. \textit{Point Group:} \(\overline{1}\). As masses to 0.8 mm.

Physical Properties: Cleavage: Excellent on (001). Tenacity: Brittle. Fracture: Uneven. Hardness = \(\sim 3\) \(D\text{(meas.)} = 3.40\) \(D\text{(calc.)} = 3.35\) Nonfluorescent.


Optical Class: Biaxial (-). \(\alpha = 1.757(4)\) \(\beta = 1.776(4)\) \(\gamma = 1.781(4)\) \(2V\text{(calc.)} = 53.8^\circ\)

Cell Data: Space Group: \(P\overline{1}\). \(a = 5.4262(11)\) \(b = 5.4274(11)\) \(c = 16.387(3)\) \(\alpha = 87.61(3)^\circ\)

Absorption: \(Z > Y > X\).

Occurrence: In a heavily brecciated hydrothermal vein.

Association: Quartz.

Distribution: From the Spring Creek copper mine, 10 km south of Wilmington, northeastern flank of Mt. Remarkable, South Flinders Range, South Australia, Australia.

Name: Honors Johann Menge (1788-1852), German geologist and linguist whose 1841 booklet, The Mineral Kingdom of South Australia, highlighted the mineral wealth of South Australia and aided the discovery of major copper deposits at Burra and Kapunda.

Type Material: South Australian Museum, Adelaide, South Australia, Australia (G34744).

References: (1) Elliott, P. (2022) Mengeite \(\text{Ba(Mg,Mn}^{2+})\text{Mn}^{3+}4(\text{PO}_4)_4(\text{OH})_4 \cdot 4\text{H}_2\text{O}\), a new mineral from the Spring Creek mine, South Australia, Australia. Can. Mineral., 60(5), 815-824.