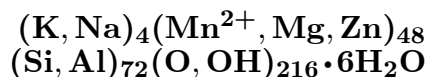


Franklinphilite



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Crystal Data: Triclinic, pseudohexagonal. *Point Group:* 1 or $\bar{1}$. Platy crystals, to 0.5 mm, in very fine-grained tangled radial aggregates.

Physical Properties: *Cleavage:* Imperfect on {001}. *Tenacity:* Brittle. *Hardness* = 4
D(meas.) = 2.6–2.8 D(calc.) = 2.66

Optical Properties: Translucent to nearly opaque; transparent to translucent in thin section. *Color:* Very dark brown to black. *Streak:* Light brown. *Luster:* Vitreous to slightly resinous. *Optical Class:* Biaxial (-). *Pleochroism:* Distinct; X = pale yellow; Y = Z = deep brown. *Orientation:* $X \wedge (001) \simeq 6^\circ$. $\alpha = 1.545(5)$ $\beta = 1.583(3)$ $\gamma = 1.583(3)$ $2V(\text{meas.}) = 10(3)^\circ$ $2V(\text{calc.}) = 0^\circ$

Cell Data: *Space Group:* P1 or $P\bar{1}$; orthohexagonal cell is $a = 5.521(4)$ $b = 9.560(6)$ $c = 36.57(5)$ $Z = 3/8$

X-ray Powder Pattern: Franklin, New Jersey, USA.
12.3 (100), 2.583 (40), 2.737 (30), 2.362 (30), 1.594 (30), 1.580 (30), 4.79 (20)

Chemistry:	(1)
SiO ₂	44.0
Al ₂ O ₃	3.6
Fe ₂ O ₃	7.8
MnO	22.3
MgO	6.4
ZnO	5.9
Na ₂ O	0.4
K ₂ O	1.5
H ₂ O	[8.1]
Total	[100.0]

(1) Franklin, New Jersey, USA.; by electron microprobe, H₂O by difference, corresponding to $(\text{K}_{2.6}\text{Na}_{1.1})_{\Sigma=3.7}(\text{Mn}_{26.1}\text{Mg}_{13.2}\text{Zn}_{6.0}\text{Fe}_{2.7}^{3+})_{\Sigma=48.0}(\text{Si}_{60.8}\text{Al}_{5.8}\text{Fe}_{5.4}^{3+})_{\Sigma=72.0}[\text{O}_{163.2}(\text{OH})_{52.8}]_{\Sigma=216.0} \cdot n\text{H}_2\text{O}$.

Polymorphism & Series: Forms a series with lenilenapeite.

Occurrence: In a veinlet crosscutting a breccia of calcite, aegirine, and serpentine in a metamorphosed stratiform zinc deposit.

Association: Friedelite, nelenite, rhodonite, tirodite.

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

Name: From the locality Franklin, New Jersey, USA, and the Greek for *friend*, for the association of elements characteristic of Franklin.

Type Material: National Museum of Natural History, Washington, D.C., USA, 167390.

References: (1) Dunn, P.J., D.R. Peacor, and S.-C. Su (1992) Franklinphilite, the manganese analog of stilpnomelane, from Franklin, New Jersey. *Mineral. Record*, 23, 465–468. (2) (1993) *Amer. Mineral.*, 78, 672–673 (abs. ref. 1).