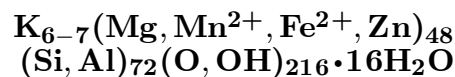


Lennilenapeite



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Crystal Data: Triclinic. *Point Group:* n.d. As platy crystals forming dense aggregates, to 1 cm; as drusy coatings.

Physical Properties: *Cleavage:* Perfect on {001}, imperfect on {hk0}. *Tenacity:* Brittle. Hardness = ~3 D(meas.) = 2.72 D(calc.) = n.d.

Optical Properties: Translucent. *Color:* Dark brown, light green; black in aggregates. *Streak:* Brown. *Luster:* Vitreous to resinous. *Optical Class:* Biaxial (-); pseuduniaxial (-). *Pleochroism:* Strong; X = light brown to colorless; Y = Z = dark brown. *Absorption:* Y = Z > X. $\alpha = 1.553(2)$ $\beta = 1.594(4)$ $\gamma = 1.594(4)$ $2V(\text{meas.}) = 0^\circ$

Cell Data: *Space Group:* n.d. $a = 21.9(1)$ $b = \text{n.d.}$ $c = \text{n.d.}$ $\alpha = \text{n.d.}$ $\beta = \text{n.d.}$ $\gamma = \text{n.d.}$ $Z = 1$

X-ray Powder Pattern: Franklin, New Jersey, USA.
12.11 (100), 2.582 (40), 2.734 (30), 2.365 (30), 1.593 (30), 1.578 (30), 4.07 (20)

Chemistry:	(1)	(2)
SiO ₂	44.5	45.11
Al ₂ O ₃	5.4	4.79
Fe ₂ O ₃	5.9	7.15
FeO	6.4	7.32
MnO	11.6	6.22
ZnO	6.3	4.92
MgO	7.0	11.39
CaO	trace	0.59
BaO	1.3	0.91
K ₂ O	3.0	2.76
Na ₂ O	0.2	0.38
H ₂ O	8.4	[8.46]
Total	100.0	[100.00]

(1) Franklin, New Jersey, USA; by electron microprobe, Fe²⁺:Fe³⁺ and H₂O separately determined, total recalculated to 100.0% from 102.2%; corresponds to (K_{5.36}Ba_{0.71}Na_{0.54})_{Σ=6.61}(Mg_{14.63}Mn_{13.78}Fe_{7.50}²⁺Zn_{6.52}Fe_{5.57}³⁺)_{Σ=48.00}(Si_{62.42}Al_{8.93}Fe_{0.65}³⁺)_{Σ=72.00}[O_{171.29}(OH)_{44.71}]_{Σ=216.00}•16.94H₂O. (2) Do.; H₂O by difference, corresponds to (K_{4.79}Na_{1.01}Ca_{0.86}Ba_{0.48})_{Σ=7.14}(Mg_{23.12}Fe_{8.33}²⁺Mn_{7.17}Zn_{4.95}Fe_{4.43}³⁺)_{Σ=48.00}(Si_{61.42}Al_{7.69}Fe_{2.89}³⁺)_{Σ=72.00}[O_{170.33}(OH)_{45.67}]_{Σ=216.00}•15.57H₂O.

Polymorphism & Series: Forms a series with franklinphilite.

Occurrence: Apparently as both a primary and a late-stage low-temperature hydrothermal mineral in a metamorphosed stratiform zinc deposit.

Association: Nelenite, tirodite, franklinite, willemite, sphalerite, dolomite.

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

Name: For the *Lenni Lenape* Indians (*original people* in the Algonquin Indian language) who inhabited the Franklin area.

Type Material: Harvard University, Cambridge, Massachusetts, 105542; National Museum of Natural History, Washington, D.C., USA, R582, 140297.

References: (1) Dunn, P.J., D.R. Peacor, and W.B. Simmons (1984) Lennilenapeite, the Mg-analogue of stilpnomelane, and chemical data on other stilpnomelane species from Franklin, New Jersey. *Can. Mineral.*, 22, 259–263. (2) (1985) *Amer. Mineral.*, 70, 216 (abs. ref. 1).

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