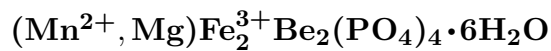


Faheyite



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Crystal Data: Hexagonal. *Point Group:* 622 (probable). As needlelike crystals, showing $\{10\bar{1}0\}$, $\{11\bar{2}0\}$, $\{0001\}$, and several $\{h0\bar{i}l\}$ forms; more generally fibrous, to 1 mm, elongated along $[0001]$, in flat rosettes and botryoidal masses; in mats.

Physical Properties: *Cleavage:* One, $\parallel [0001]$, perfect. Hardness = n.d. $D(\text{meas.}) = 2.660$
 $D(\text{calc.}) = 2.670$

Optical Properties: Semitransparent. *Color:* White, bluish white to brownish white.
Optical Class: Uniaxial (+). $\omega = 1.631$ $\epsilon = 1.652$

Cell Data: *Space Group:* $P6_222$, $P6_422$, $6mm$, 622, $\bar{6}m2$, or $6/mmm$. $a = 9.42(2)$
 $c = 15.98(3)$ $Z = 3$

X-ray Powder Pattern: Sapucaia mine, Brazil.

5.72 (10), 7.28 (9), 3.244 (6), 3.085 (6), 3.029 (6), 3.962 (5), 2.724 (3)

Chemistry:

	(1)
P_2O_5	42.08
Al_2O_3	0.11
Fe_2O_3	23.65
Mn_2O_3	0.00
FeO	0.00
MnO	6.61
BeO	8.02
MgO	1.26
Na_2O	0.93
K_2O	trace
F	trace
H_2O	16.45
Total	[99.11]

(1) Sapucaia mine, Brazil; Na and K by flame photometry, recalculated after deduction of insoluble quartz and muscovite 9.44%; then corresponding to $(\text{Mn}_{0.61}\text{Mg}_{0.21}\text{Na}_{0.20})_{\Sigma=1.02}(\text{Fe}_{1.95}\text{Al}_{0.01})_{\Sigma=1.96}\text{Be}_{2.11}(\text{PO}_4)_{3.90} \cdot 6.01\text{H}_2\text{O}$.

Occurrence: A rare late-stage secondary mineral in a complex granite pegmatite (Sapucaia mine, Brazil).

Association: Quartz, muscovite, variscite, frondelite (Sapucaia mine, Brazil); strengite (Roosevelt mine, South Dakota, USA).

Distribution: From the Sapucaia pegmatite mine, about 50 km east-southeast of Governador Valadares, Minas Gerais, Brazil. In the USA, at the Roosevelt mine, near Custer, Custer Co., South Dakota. From the Noumas mine, Blesberg, Cape Province, South Africa.

Name: Honoring Joseph John Fahey (1901–1980), American analytical chemist, U.S. Geological Survey, Washington, D.C., USA.

Type Material: National Museum of Natural History, Washington, D.C., USA, 112653.

References: (1) Lindberg, M.L. and K.J. Murata (1953) Faheyite, a new phosphate mineral from the Sapucaia pegmatite mine, Minas Gerais, Brazil. *Amer. Mineral.*, 38, 263–270.

(2) Lindberg, M.L. (1964) Crystallography of faheyite, Sapucaia pegmatite mine, Minas Gerais, Brazil. *Amer. Mineral.*, 49, 395–398.

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