

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As free-standing fan-shaped aggregates or as flattened crystals to 4 mm.

**Physical Properties:** *Cleavage:* Perfect on {001}. *Fracture:* n.d. *Tenacity:* Brittle. Hardness = 2-2.5 D(meas.) = 2.50(2) D(calc.) = 2.499 Soluble in 10% HCl.

**Optical Properties:** Transparent. *Color:* Light yellow, or greenish; colorless in transmitted light. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (+).  $\alpha = 1.538(1)$   $\beta = 1.540(1)$   $\gamma = 1.543(1)$   $2V(\text{calc.}) = 72.5^\circ$  *Orientation:*  $b = Z, c \wedge X = 45^\circ$ .

**Cell Data:** *Space Group:* P2<sub>1</sub>/c.  $a = 8.3086(8)$   $b = 12.906(1)$   $c = 17.486(2)$   $\beta = 102.01(1)^\circ$   $Z = 4$

**X-ray Powder Pattern:** Kovdor massif, Kola Peninsula, Russia. 8.56 (100), 10.31 (33), 2.849 (33), 2.675 (25) 3.496 (23), 3.314 (23)

Chemistry:	(1)	(2)
Na <sub>2</sub> O	9.17	9.20
MgO	29.40	29.94
CaO	0.07	
MnO	0.33	
FeO	0.84	
P <sub>2</sub> O <sub>5</sub>	41.57	42.14
H <sub>2</sub> O	[18.62]	18.72
Total	100.00	100.00

(1) Kovdor massif, Kola Peninsula, Russia; average electron microprobe analysis, H<sub>2</sub>O by difference; corresponding to (Na<sub>2.02</sub>Ca<sub>0.01</sub>)<sub>Σ=2.03</sub>(Mg<sub>4.98</sub>Fe<sup>2+</sup><sub>0.08</sub>Mn<sub>0.03</sub>)<sub>Σ=5.09</sub>P<sub>4</sub>O<sub>16.11</sub>·7.06H<sub>2</sub>O. (2) Na<sub>2</sub>Mg<sub>5</sub>(PO<sub>4</sub>)<sub>4</sub>·7H<sub>2</sub>O.

**Occurrence:** A hydrothermal mineral in vuggy veins of dolomite carbonatite that cuts forsterite-magnetite ore in an alkaline-ultramafic massif.

**Association:** Bobierite, pyrite, collinsite, chlorite, nastrophite, juonniite, cattite.

**Distribution:** From the Zhelezny (Iron) mine, Kovdor massif, Kola Peninsula, Russia.

**Name:** Honors crystallographer Alexander Yu. Bakhchisaraitsev (1947-1998).

**Type Material:** Mining Museum, St. Petersburg Mining Institute, Russia, and the Geological Museum, University of Oulu, Finland.

**References:** (1) Liferovich, R.P., YA.A. Pakhomovsky, O.V. Yakubovich, W. Massa, K. Laajoki, S. Gehör, A.N. Bogdanova, and N.V. Sorokhtina (2000) Bakhchisaraitsevite, Na<sub>2</sub>Mg<sub>5</sub>[PO<sub>4</sub>]<sub>4</sub>·7H<sub>2</sub>O, a new mineral from hydrothermal assemblages related to phoscorite-carbonatite complex of the Kovdor massif, Russia. *Neues Jahrb. Mineral., Monatsh.*, 402-418. (2) Yakubovich, O.V., W. Mass, R.P. Liferovich, and YA.A. Pakhomovsky (2000) The crystal structure of bakhchisaraitsevite, [Na<sub>2</sub>(H<sub>2</sub>O)<sub>2</sub>]{(Mg<sub>4.5</sub>Fe<sub>0.5</sub>)(PO<sub>4</sub>)<sub>4</sub>(H<sub>2</sub>O)<sub>5</sub>}, a new mineral species of hydrothermal origin from the Kovdor phoscorite-carbonatite complex, Russia. *Can. Mineral.*, 38(4), 831-838. (3) (2000) *Amer. Mineral.*, 86, 767 (abs. refs. 1 and 2).