

**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. As flattened prismatic crystals, to ~ 0.6 mm, displaying {100} (dominant), {010}, and {101}.

**Physical Properties:** *Cleavage:* Perfect on {100}, distinct on {010}. *Tenacity:* Brittle. *Fracture:* Stepped. *Hardness* = ~5 *D(meas.)* = 2.83 *D(calc.)* = 2.72

**Optical Properties:** Transparent. *Color:* Creamy to pale white, colorless in transmitted light. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (+). *a* = 1.520(5) *β* = 1.525(5) *γ* = 1.538(5) *2V(meas.)* = 60(5)° *2V(calc.)* = 61.86° *Orientation:* *Y* = *c*, *X* = *a*, *Z* = *b*.

**Cell Data:** *Space Group:* Pcca. *a* = 14.972(8) *b* = 14.137(7) *c* = 14.594(8) *Z* = 4

**X-ray Powder Pattern:** Mt. Kukisvumchorr, Khibiny alkaline massif, Kola Peninsula, Russia. 3.337 (100), 3.248 (90), 3.014 (80), 6.57 (60), 4.20 (50), 7.00 (40), 3.101 (40)

| Chemistry:                     | (1)    | (2)    |
|--------------------------------|--------|--------|
| Na <sub>2</sub> O              | 4.32   | 2.49   |
| K <sub>2</sub> O               | 10.73  | 11.33  |
| CaO                            | 3.42   | 4.50   |
| Y <sub>2</sub> O <sub>3</sub>  | 15.49  | 18.10  |
| Ce <sub>2</sub> O <sub>3</sub> | 0.10   |        |
| Dy <sub>2</sub> O <sub>3</sub> | 0.68   |        |
| Er <sub>2</sub> O <sub>3</sub> | 0.88   |        |
| Tm <sub>2</sub> O <sub>3</sub> | 0.18   |        |
| Yb <sub>2</sub> O <sub>3</sub> | 1.53   |        |
| ThO <sub>2</sub>               | 0.62   |        |
| SiO <sub>2</sub>               | 57.55  | 57.80  |
| H <sub>2</sub> O               | 4.70   | 5.78   |
| Total                          | 100.20 | 100.00 |

(1) Mt. Kukisvumchorr, Khibiny massif, Kola Peninsula, Russia; average of 10 electron microprobe analyses, H<sub>2</sub>O by Penfield method; corresponding to (K<sub>2.85</sub>Na<sub>0.15</sub>)<sub>Σ=3.00</sub>Na<sub>1.00</sub>(Ca<sub>0.71</sub>Na<sub>0.60</sub>)<sub>Σ=1.31</sub>(Y<sub>1.72</sub>Yb<sub>0.10</sub>Er<sub>0.06</sub>Dy<sub>0.05</sub>Th<sub>0.03</sub>Ce<sub>0.01</sub>Tm<sub>0.01</sub>Ca<sub>0.05</sub>)<sub>Σ=2.03</sub>[Si<sub>12</sub>O<sub>30.02</sub>]<sub>·3.27H<sub>2</sub>O</sub>. (2) K<sub>3</sub>NaCaY<sub>2</sub>(Si<sub>12</sub>O<sub>30</sub>)·4(H<sub>2</sub>O).

**Occurrence:** In voids in a thin (3.4 cm) sodalite-aegirine-microcline veinlet cutting ijolite-urtite.

**Association:** Microcline, aegirine, calcite, catapleiite, donnayite-(Y), fluorapophyllite, fluorite, galena, lead, litharge, molybdenite, natrolite-gonnardite, pyrochlore, rinkite, strontianite, vuorijarvite-K.

**Distribution:** From Mt. Kukisvumchorr, Khibiny alkaline massif, Kola Peninsula, Russia.

**Name:** Honors Victor Nesterovich *Yakovenchuk* (b. 1950), researcher at the Laboratory of Self-Organization in Mineral Systems, Geological Institute of the Kola Science Centre, Russian Academy of Sciences, for his contributions to the study of minerals of alkaline and alkaline-ultrabasic massifs.

**Type Material:** Mineralogical Museum, St. Petersburg State University, Russia (1/19174).

**References:** (1) Krivovichev, S.V., Y.A. Pakhomovsky, G.Yu. Ivanyuk, J.A. Mikhailova, Y.P. Men'shikov, T. Armbruster, E.A. Selivanova, and N. Meisser (2007) Yakovenchukite-(Y), K<sub>3</sub>NaCaY<sub>2</sub>(Si<sub>12</sub>O<sub>30</sub>)(H<sub>2</sub>O)<sub>4</sub>, a new mineral from the Khibiny massif, Kola Peninsula, Russia: A novel type of octahedral-tetrahedral open-framework structure. *Amer. Mineral.*, 92, 1125-1530.