

**Crystal Data:** Monoclinic. *Point Group:* *m*. As prismatic crystals, to 1.8 cm, some showing longitudinally striations on { $\bar{2}$  01}, also showing {100}, { $\bar{1}$  01}, and less commonly {010} and {021}. Microtwinning on (001) and ( $\bar{4}$  01).

**Physical Properties:** *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 5  
D(meas.) = 2.88(3) D(calc.) = 2.90

**Optical Properties:** Translucent, almost opaque. *Color:* Brownish to yellowish brown.

*Streak:* White. *Luster:* Vitreous.

*Optical Class:* Biaxial (+).  $\alpha = 1.677(1)$   $\beta = 1.684(2)$   $\gamma = 1.790(5)$   $2V(\text{meas.}) = 25(10)^\circ$

*Orientation:*  $Y = b$ . "Practically" nonpleochroic.

**Cell Data:** *Space Group:* *Cm*.  $a = 14.450(6)$   $b = 13.910(6)$   $c = 7.836(4)$   $\beta = 117.42(1)^\circ$   
 $Z = 2$

**X-ray Powder Pattern:** Neskevaara Hill, Vuoriharvi complex, Northern Karelia, Russia.  
6.93 (100), 3.21 (100), 3.11 (90), 4.93 (80), 2.62 (60), 2.49 (50), 1.687 (40)

<b>Chemistry:</b>	(1)
Na <sub>2</sub> O	3.10
K <sub>2</sub> O	88.3
BaO	3.37
MgO	0.75
MnO	0.50
FeO	1.82
SiO <sub>2</sub>	39.29
TiO <sub>2</sub>	15.08
Nb <sub>2</sub> O <sub>5</sub>	17.96
<u>H<sub>2</sub>O</u>	<u>9.26</u>
Total	99.96

(1) Neskevaara Hill, Vuoriharvi complex, Northern Karelia, Russia; electron microprobe analysis, H<sub>2</sub>O by TGA; corresponding to Na<sub>1.22</sub>K<sub>2.29</sub>Ba<sub>0.26</sub>(Fe<sub>0.31</sub>Mg<sub>0.23</sub>Mn<sub>0.09</sub>) $\Sigma=0.63$ (Ti<sub>2.31</sub>Nb<sub>1.65</sub>) $\Sigma=3.96$  (Si<sub>8</sub>O<sub>24</sub>)[O<sub>2.78</sub>(OH)<sub>1.22</sub>] $\Sigma=4$ ·5.68H<sub>2</sub>O.

**Mineral Group:** Labuntsovite group.

**Occurrence:** In alkaline igneous rocks sometimes intergrown with labuntsovite-Fe or in hydrothermally altered carbonatite veins.

**Association:** Dolomite, calcite, phlogopite, fluorapatite, pyrite, pyrrhotite, chalcopyrite, serpentine, nenadkevichite (Neskevaara Hill); calcite, labuntsovite-Fe, donnayite-(Y), bitumen (Kirovskii mine).

**Name:** For the locality (Neskevaara Hill) and Fe-dominant composition of the D structural site.

**Distribution:** Neskevaara Hill, central part of the Vuoriharvi alkaline complex, Northern Karelia, and the Kirovskii apatite mine, Mount Kukisvumchorr, Khibiny alkaline massif, Kola Peninsula, Russia.

**Type Material:** A.E. Fersman Mineralogical Museum, Russian Academy of Science, Moscow, Russia; 2814/1.

**References:** (1) Chukanov, N.V., V.V. Subbotin, I.V. Pekov, A.E. Zadov, A.I. Tsepin, K.A. Rozenberg, R.K. Rastsvetaeva, and G. Ferraris (2003) Neskevaaraite-Fe - NaK<sub>3</sub>Fe(Ti,Nb)<sub>4</sub>(Si<sub>4</sub>O<sub>12</sub>)<sub>2</sub>(O,OH)<sub>4</sub>·6H<sub>2</sub>O, a new labuntsovite group mineral. *New Data on Minerals*, 38, 9-14. (2) (2005) *Amer. Mineral.*, 90, 520 (abs. ref. 1).