

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, Vuoriyarvi 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)

Chemistry:	(1)
Na ₂ O	3.10
K ₂ O	88.3
BaO	3.37
MgO	0.75
MnO	0.50
FeO	1.82
SiO ₂	39.29
TiO ₂	15.08
Nb ₂ O ₅	17.96
<u>H₂O</u>	<u>9.26</u>
Total	99.96

(1) Neskevaara Hill, Vuoriyarvi complex, Northern Karelia, Russia; electron microprobe analysis, H₂O by TGA; corresponding to Na_{1.22}K_{2.29}Ba_{0.26}(Fe_{0.31}Mg_{0.23}Mn_{0.09}) $\Sigma=0.63$ (Ti_{2.31}Nb_{1.65}) $\Sigma=3.96$ (Si₈O₂₄)[O_{2.78}(OH)_{1.22}] $\Sigma=4$ ·5.68H₂O.

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 Vuoriyarvi 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 - NaK₃Fe(Ti,Nb)₄(Si₄O₁₂)₂(O,OH)₄·6H₂O, a new labuntsovite group mineral. *New Data on Minerals*, 38, 9-14. (2) (2005) *Amer. Mineral.*, 90, 520 (abs. ref. 1).