

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As equant crystals, platy on (100) and as prisms elongate on [001] to 1 mm., as aggregates to 3 mm.

Physical Properties: *Cleavage:* Perfect on {100}. *Fracture:* Splintery, step-like.
Tenacity: Brittle. $D(\text{meas.}) = 2.60(3)$ $D(\text{calc.}) = 2.584$ *Hardness* = 3

Optical Properties: Transparent to translucent. *Color:* Yellow with orange or pink shades.
Streak: White. *Luster:* Vitreous.
Optical Class: Biaxial (+). $\alpha = 1.569(2)$ $\beta = 1.583(2)$ $\gamma = 1.602(2)$ $2V(\text{meas.}) = 80(3)^\circ$
 $2V(\text{calc.}) = 82^\circ$ *Pleochroism:* X = pale yellow, Y = honey yellow, Z = pinkish yellow [Table 1 which contradicts the abstract and text which says "non-pleochoric".] *Orientation:* $X \wedge c = 84^\circ$, $Y \wedge c = 66^\circ$, $Z \wedge c = 24^\circ$. *Dispersion:* Weak, $r > v$.

Cell Data: *Space Group:* $P\bar{1}$. $a = 10.244$ $b = 11.924$ $c = 5.276$
 $\alpha = 103.491^\circ$ $\beta = 96.960^\circ$ $\gamma = 91.945^\circ$ $Z = 1$

X-ray Powder Pattern: Mount Yukspor, Khibina alkaline massif, Kola Peninsula, Russia.
11.778 (100), 4.390 (70), 3.012 (70), 2.606 (70), 4.109 (60), 2.730 (60), 3.390 (50)

Chemistry:	(1)	(1)
Na ₂ O	7.77	SiO ₂ 49.67
K ₂ O	14.07	TiO ₂ 3.32
MgO	0.24	F 0.39
MnO	0.73	H ₂ O [10.98]
Fe ₂ O ₃	11.29	<u>-O=F</u> 0.16
Al ₂ O ₃	0.58	Total 98.88

(1) Mount Yukspor, Khibina alkaline massif, Kola Peninsula, Russia; average of 12 electron microprobe analyses supplemented by Mössbauer and IR spectroscopy, H₂O calculated from structure analysis; corresponds to $(\text{Na}_{2.44}\square_{1.56})_{\Sigma=4}\text{K}_{2.91}(\text{Fe}^{3+}_{1.38}\text{Ti}_{0.40}\text{Al}_{0.11}\text{Mn}^{2+}_{0.10}\text{Mg}_{0.06})_{\Sigma=2.05}\text{Si}_{8.05}\text{O}_{20}[(\text{OH})_{3.80}\text{F}_{0.20}]_{\Sigma=4}(\text{H}_2\text{O})_4$.

Occurrence: In hyperagpaitic pegmatite cutting ijolite-urtite, associated with nepheline syenites as an oxidized product of epithermal alteration of ershovite.

Association: Sodalite, aegirine, arfvedsonite, pectolite, shcherbakovite, lamprophyllite, lomonosovite, shafranovskite, villiamite, natrophosphate.

Distribution: From Mount Yukspor, Khibina alkaline massif, Kola Peninsula, Russia.

Name: Named for its structural, chemical and genetic relation to the *ershovite*, for which it is the Na-deficient, Fe³⁺-dominant analog. The prefix derived from the Greek *para* for "close by".

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (#3793).

References: (1) Khomyakov, A.P., F. Cámara, E. Sokolova, Y. Abdu, and F.C. Hawthorne (2010) Paraershovite, $\text{Na}_3\text{K}_3\text{Fe}_2^{3+}(\text{Si}_4\text{O}_{10}\text{OH})_2(\text{OH})_2(\text{H}_2\text{O})_4$, A new mineral species from the Khibina alkaline massif, Kola Peninsula, Russia: description and crystal structure. *Can. Mineral.*, 48, 279-290. (2) (2011) *Amer. Mineral.*, 96, 1658 (abs. ref. 1).