

**Fedorite** **$\text{KNa}_4\text{Ca}_4(\text{Si, Al})_{16}\text{O}_{36}(\text{OH})_4 \cdot 6\text{H}_2\text{O}$** 

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**Crystal Data:** Triclinic. *Point Group:*  $\bar{1}$ . As pseudo-hexagonal tabular crystals resembling muscovite crystals, to 5 cm.

**Physical Properties:** *Cleavage:* Perfect micaceous on {001}. *Hardness* = n.d.  
D(meas.) = 2.43–2.58 D(calc.) = [2.43]

**Optical Properties:** Transparent to translucent. *Color:* Colorless, whitish to pale raspberry-red. *Luster:* Vitreous, satiny, pearly.  
*Optical Class:* Biaxial (-). *Orientation:*  $X = c$ ;  $Y = b$ ;  $Z = a$ . *Dispersion:*  $r < v$ , distinct.  
 $\alpha = 1.522$   $\beta = 1.530$   $\gamma = 1.531$   $2V(\text{meas.}) = 32^\circ$

**Cell Data:** *Space Group:*  $C\bar{1}$ .  $a = 9.676(2)$   $b = 16.706(1)$   $c = 13.233(2)$   $\alpha = 93.35^\circ$   
 $\beta = 114.96^\circ$   $\gamma = 90.03^\circ$   $Z = 2$

**X-ray Powder Pattern:** Turii Peninsula, Russia.  
2.93 (100b), 2.97 (90), 1.826 (90b), 11.7 (80), 6.0 (80), 3.13 (80b), 4.21 (70)

<b>Chemistry:</b>	(1)
	SiO <sub>2</sub> 62.99
	Al <sub>2</sub> O <sub>3</sub> 3.30
	CaO 15.80
	Na <sub>2</sub> O 8.00
	K <sub>2</sub> O 3.80
	LOI 5.33
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	Total 99.22

(1) Turii Peninsula, Russia; corresponding to  $\text{K}_{1.08}\text{Ca}_{4.08}\text{Na}_{3.72}$   
 $(\text{Si}_{15.20}\text{Al}_{0.80})_{\Sigma=16.00}\text{O}_{36.20}(\text{OH})_{3.80} \cdot 6\text{H}_2\text{O}$ .

**Occurrence:** In fine veinlets in fenitized sandstone (Turii Peninsula, Russia).

**Association:** Narsarsukite, quartz, apophyllite (Turii Peninsula, Russia).

**Distribution:** On the Turii Peninsula, Kola Peninsula, and in the Murun massif, southwest of Olekminsk, Yakutia, Russia.

**Name:** For Evgraf Stepanovich Fedorov (1853–1919), eminent Russian crystallographer, Mining Institute, St. Petersburg, Russia.

**Type Material:** Mineralogical Museum, St. Petersburg University, St. Petersburg, 1505/2–3; Geology Museum, Kola Branch, Academy of Sciences, Apatity, 1873; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 73038–73040, 73371, 73772, vis5121.

**References:** (1) Kukharenko, A.A., M.P. Orlova, and A.G. Bulakh (1965) The Caledonian ultrabasic alkalic rocks and carbonatites of the Kola Peninsula and northern Karelia. *Izd. Nedra, Moscow*, 479–481 (in Russian). (2) (1967) *Amer. Mineral.*, 52, 561–562 (abs. ref. 1). (3) Sokolova, G.V., A.A. Kashaev, V.A. Drits, and V.V. Ilyukhin (1983) The crystal structure of fedorite. *Kristallografiya (Sov. Phys. Crystal.)*, 28, 170–172 (in Russian).