

Kalifersite**K₅Fe³⁺₇Si₂₀O₅₀(OH)₆·12H₂O**

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As fibrous bundles of (100) lamellae to 5 mm, elongate along [001], and as aggregates to 1 cm in cavities.

Physical Properties: *Cleavage:* Good on {100} and {010}. *Tenacity:* Brittle. *Fracture:* Fibrous. Hardness = 2 D(meas.) = 2.37(2) D(calc.) = 2.28 Nonfluorescent.

Optical Properties: Translucent. *Color:* Pink-brownish. *Streak:* White. *Luster:* Earthy to silky.

Optical Class: Biaxal (+). $\alpha = 1.523(2)$ $\beta = 1.525(2)$ $\gamma = 1.550(2)$ $2V(\text{meas.}) = 30(2)^\circ$

$2V(\text{calc.}) = 32^\circ$ *Orientation:* $X \approx a$, $Y \approx b$, $Z \approx c$. Optically pseudo-orthorhombic.

Pleochroism: Medium, Z = yellow, $Y = X$ = slightly pink.

Cell Data: *Space Group:* $P\bar{1}$. $a = 14.86(4)$ $b = 20.54(4)$ $c = 5.29(2)$ $\alpha = 95.6(3)^\circ$ $\beta = 92.3(3)^\circ$ $\gamma = 94.4(3)^\circ$ $Z = 1$

X-Ray Diffraction Pattern: Mt. Kukisvumchorr, Khibina massif, Kola Peninsula, Russia.

12.36 (100), 11.60 (40), 10.21 (14), 4.162 (5), 3.818b (5), 2.196 (5), 2.017b (5)

Chemistry:

	(1)
Na ₂ O	1.98
K ₂ O	7.71
MgO	1.21
MnO	2.38
Fe ₂ O ₃	17.96
SiO ₂	55.39
H ₂ O	13.42
Total	100.40

(1) Mt. Kukisvumchorr, Khibina massif, Kola Peninsula, Russia; average electron microprobe analysis supplemented by IR spectroscopy, H₂O by Penfield method; corresponds to (K_{3.58}Na_{1.40})_{Σ=4.98}[Fe³⁺_{4.92}Mn_{0.73}Mg_{0.66}Ca_{0.14}]_{Σ=6.45}[Si_{20.16}O₅₀][(OH)_{3.44}(H₂O)_{14.56}]_{Σ=18}.

Polymorphism & Series: In the palysepole polysomatic series.

Occurrence: In hydrothermally altered peralkaline pegmatite in urtite.

Association: Aegirine, fenaksite, pectolite.

Distribution: From Mt. Kukisvumchorr, Khibina massif, Kola Peninsula, Russia.

Name: Alludes to the chemical composition (*kalium*, *ferrum*, *silicium*).

Type Material: A.E. Fersman Mineralogical Museum, RAS, Moscow, Russia (90280 and 90281) and the Natural History Museum, Torino, Italy (1998001.01).

References: (1) Ferraris, G., A.P. Khomyakov, E. Belluso, and S.V. Soboleva (1998) Kalifersite, a new alkaline silicate from Kola Peninsula (Russia) based on a palygorskite-sepiolite polysomatic series. Eur. J. Mineral., 10, 865-874. (2) (1999) Amer. Mineral., 84, 991 (abs. ref. 1).