

Ershovite**Na₄K₃(Fe, Mn, Ti)₂Si₈O₂₀(OH)₄•5H₂O**

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Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Forms parallel fibrous aggregates, fibers elongated along [001], to 3 cm; in disseminated elongated grains, to 1 cm.

Physical Properties: *Cleavage:* {100} and {010}, perfect. *Fracture:* Fibrous. Hardness = 2–3 D(meas.) = 2.75(2) D(calc.) = 2.73

Optical Properties: Translucent; transparent in thin section. *Color:* Olive-green with brown and yellow tinges. *Streak:* White. *Luster:* Vitreous.

Optical Class: Biaxial (+). *Pleochroism:* Strong; X = Y = light green or yellow; Z = dark olive-green. *Orientation:* X \wedge c = 86°; Y \wedge c = 73°; Z \wedge c = 17°. *Dispersion:* r > v. $\alpha = 1.569(2)$ $\beta = 1.574(2)$ $\gamma = 1.590(2)$ 2V(meas.) = 58(2)° 2V(calc.) = 59°

Cell Data: *Space Group:* $P\bar{1}$. a = 10.244(2) b = 11.924(3) c = 5.276(3) $\alpha = 103.491(2)^\circ$ $\beta = 96.960(3)^\circ$ $\gamma = 91.945(3)^\circ$ Z = 1

X-ray Powder Pattern: Khibiny massif, Russia.

11.58 (10), 2.990 (10), 2.709 (8), 1.652 (8), 2.608 (7), 2.459 (6), 2.160 (6)

Chemistry:

	(1)
SiO ₂	47.1
TiO ₂	3.0
FeO	6.1
MnO	4.7
MgO	0.5
CaO	0.1
Na ₂ O	12.4
K ₂ O	13.6
H ₂ O	[12.5]
Total	[100.0]

(1) Khibiny massif, Russia; by electron microprobe, H₂O by difference; corresponds to Na_{4.08}K_{2.95}(Fe_{0.87}Mn_{0.68}Ti_{0.38}Mg_{0.13}Ca_{0.02})_{Σ=2.08}Si₈O_{19.98}(OH)_{4.04}•5.06H₂O.

Occurrence: In unweathered ultra-algpaic pegmatites in a differentiated alkalic massif.

Association: Orthoclase, nepheline, sodalite, aegirine, alkalic amphibole, villiaumite, natrite, rasvumite, vuonnemite, astrophyllite, shcherbakovite, kazakovite, koashvite, thermonatrite, nacaphite.

Distribution: From Mts. Rasvumchorr and Koashva, Khibiny massif, Kola Peninsula, Russia.

Name: For Professor Vadim Victorovich Ershov (1939–1989), of the Moscow Mining Institute, Moscow, Russia.

Type Material: Geology Museum, Kola Branch, Academy of Sciences, Apatity; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia.

References: (1) Khomyakov, A.P., Y.P. Men'shikov, R.K. Rastsvetaeva, and G.N. Nechelyustov (1993) Ershovite Na₄K₃(Fe, Mn, Ti)₂Si₈O₂₀(OH)₄•4H₂O – a new mineral. Zap. Vses. Mineral. Obshch., 122(1), 116–120 (in Russian). (2) (1994) Amer. Mineral., 79, 1010 (abs. ref. 1). (3) Rastsvetaeva, R.K., O.Y. Rekhlova, and A.P. Khomyakov (1991) Crystal structure of a new natural Na,K,Fe-silicate. Kristallografiya (Sov. Phys. Crystal.), 36, 892–897 (in Russian).