

Zhemchuzhnikovite**NaMg(Al, Fe³⁺)(C₂O₄)₃•8H₂O**

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Crystal Data: Hexagonal. *Point Group:* n.d. Crystals acicular to fibrous, showing {0001}, {11 $\bar{2}$ 0}, {22 $\bar{4}$ 1}.

Physical Properties: *Cleavage:* On {0001}, good. Hardness = 2 D(meas.) = 1.69 D(calc.) = 1.66 Soluble in H₂O, yielding a solution of about pH 5.51.

Optical Properties: Semitransparent. *Color:* Smoky green in daylight; may be violet-amethyst under artificial light. *Luster:* Vitreous.

Optical Class: Uniaxial (-). *Pleochroism:* O = greenish yellow; E = reddish violet. $\omega = 1.479$ $\epsilon = 1.408$

Cell Data: *Space Group:* n.d. $a = 16.67(5)$ $c = 12.51(3)$ $Z = 6$

X-ray Powder Pattern: n.d.

Chemistry:

	(1)
C ₂ O ₃	42.88
Al ₂ O ₃	6.14
Fe ₂ O ₃	5.95
MnO	0.06
MgO	8.57
Na ₂ O	5.69
K ₂ O	0.12
H ₂ O	29.09
insol.	1.13
Total	[99.63]

(1) Chai-Tumus coal deposit, Russia; here converted to oxides, insoluble is coal; corresponds to (Na_{0.92}K_{0.01})_{Σ=0.93}Mg_{1.06}(Al_{0.60}Fe_{0.37}³⁺)_{Σ=0.97}(C₂O₄)_{2.97}•8.07H₂O.

Occurrence: In veinlets found at a depth of 230 m in a drill core in the permafrost zone, in brown coal naturally saturated with acetic acid.

Association: Calcite, dolomite, stepanovite.

Distribution: Chai-Tumus coal deposit, 200 km south of the Lena River estuary, Bulun district, polar Sakha, Russia.

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Type Material: Mining Institute, St. Petersburg, Russia, 1955/1.

References: (1) Knipovich, Y.N., A.I. Komkov, and E.I. Nefedov (1963) On stepanovite and the new mineral zhemchuzhnikovite. Trudy. Vses. Nauchno-Issled. Geol. Inst. 96, 131–135 (in Russian). (2) (1964) Amer. Mineral., 49, 442 (abs. ref. 1). (3) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. Ocean Pictures, Moscow, 241.