

Stepanovite



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Crystal Data: Hexagonal. *Point Group:* n.d. Forms exhibited are {0001}, {11 $\bar{2}$ 0}, {01 $\bar{1}$ 2}, {10 $\bar{1}$ 4}, {5 $\bar{1}$ 42} [*sic*]; xenomorphic granular.

Physical Properties: *Fracture:* Irregular. Hardness = 2 D(meas.) = 1.69 D(calc.) = 1.69 Easily soluble in H₂O.

Optical Properties: Transparent. *Color:* Green. *Luster:* Vitreous.
Optical Class: Uniaxial (-). *Pleochroism:* O = yellow-green; E = colorless. $\omega = 1.515$
 $\epsilon = 1.417$

Cell Data: *Space Group:* n.d. $a = 9.28$ $c = 36.67$ $Z = 6$

X-ray Powder Pattern: n.d.

Chemistry:	(1)	(2)
C ₂ O ₄	50.36	50.75
Al	0.00	
Fe ³⁺	10.78	10.73
Fe ²⁺	0.00	
Mg	4.68	4.67
Na	4.48	4.42
K	0.00	
H ₂ O	29.73	29.43
Total	100.03	100.00

(1) Tyllakh deposit, Russia. (2) NaMgFe³⁺(C₂O₄)₃•8.5H₂O.

Occurrence: In thin veinlets in coal.

Association: Calcite, dolomite, whewellite, weddellite.

Distribution: From the Tyllakh brown coal deposit, left bank of the Olenhinskii channel near its mouth, estuary of the Lena River, Bulun district, polar Sakha, Russia.

Name: To honor Pavel Ivanovich Stepanov (1880–1947), Russian specialist in coal geology.

Type Material: Mining Institute, St. Petersburg, Russia, 1659/1.

References: (1) Nefedov, Y.I. (1953) [Report on new minerals] in: V.A. Mokievsky, The scientific session of the Federov Institute together with the All-Union Mineralogical Society. Zap. Vses. Mineral. Obshch., 82, 311–317 (in Russian). (2) (1955) Amer. Mineral., 40, 551 (abs. ref. 1). (3) 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). (4) (1964) Amer. Mineral., 49, 442 (abs. ref. 3). (5) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. Ocean Pictures, Moscow, 194.