

Yakhontovite

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Crystal Data: Monoclinic, probable. *Point Group:* n.d. In aggregates of equant crystals, to 10 μm .**Physical Properties:** *Fracture:* Conchoidal. Hardness = 2–3 D(meas.) = n.d. D(calc.) = n.d.**Optical Properties:** Semitransparent. *Color:* Pistachio-green. *Luster:* Dull. *Optical Class:* Biaxial. *Pleochroism:* In blue-greens. *Orientation:* $Z \wedge c = 12^\circ\text{--}14^\circ$. $\alpha = 1.530\text{--}1.547$ $\beta = \text{n.d.}$ $\gamma = 1.560\text{--}1.570$ $2V(\text{meas.}) = \text{n.d.}$ **Cell Data:** *Space Group:* n.d. $a = 5.26$ $b = 9.108$ $c = 13.89$ ($c \cdot \sin \beta$) $\beta = \text{n.d.}$ $Z = \text{n.d.}$ **X-ray Powder Pattern:** Pridorozhnoye deposit, Russia; 13.9 Å expands to 17.9 Å after treatment with glycerin. 13.9, 7.30, 4.5, 3.2, 2.88 [strongest lines only].**Chemistry:**

	(1)
SiO ₂	54.83
TiO ₂	0.00
Al ₂ O ₃	0.08
Fe ₂ O ₃	15.03
MnO	0.00
CuO	15.20
ZnO	0.40
MgO	6.21
CaO	2.62
Na ₂ O	0.00
K ₂ O	0.15
Total	94.52

(1) Pridorozhnoye deposit, Russia; by electron microprobe, corresponding to $(\text{Ca}_{0.20}\text{K}_{0.01})_{\Sigma=0.21}(\text{Cu}_{0.84}\text{Fe}_{0.83}^{3+}\text{Mg}_{0.67}\text{Zn}_{0.02}\text{Al}_{0.01})_{\Sigma=2.37}\text{Si}_4\text{O}_{10}(\text{OH})_2$; wet chemical analysis of a mixture with malachite and pseudomalachite gives H₂O 14.5% and all Fe as Fe³⁺.**Mineral Group:** Smectite group.**Occurrence:** As veins and coatings in deeply oxidized sulfide-cassiterite ores.**Association:** Pyrrhotite, chalcopyrite, pyrite, stannite, malachite, pseudomalachite, chrysocolla, iron oxides, quartz.**Distribution:** From the Pridorozhnoye [Roadside] tin deposit, right bank of the Silinka River, nine km from its confluence with the Amur River, near Komsomol'sk-on-Amur, Russia.**Name:** For Liya Konstantinova Yakhontova (1925–), Russian mineralogist, Moscow Univesity, Moscow, Russia.**Type Material:** A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 84395.**References:** (1) Postnikova, V.P., S.I. Tsipurskii, G.A. Sidorenko, and A.V. Mokhov (1986) Yakhontovite—a new copper-bearing smectite. *Mineral. Zhurnal*, 8(6), 80–84 (in Russian). (2) (1988) *Mineral. Abs.*, 39, 122 (abs. ref. 1). (3) (1991) *Amer. Mineral.*, 76, 668–669 (abs. ref. 1).

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