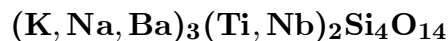


Shcherbakovite



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Crystal Data: Orthorhombic. *Point Group:* $mm2$. Crystals are long prismatic, to 5 cm; terminated crystals are uncommon.

Physical Properties: *Cleavage:* Two directions, observed microscopically, may be parting. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness = 6.5 VHN = 731–845 D(meas.) = 2.968 D(calc.) = [3.24]

Optical Properties: Opaque, translucent on thin edges. *Color:* Dark brown to blue-green. *Luster:* Vitreous, greasy on fracture.

Optical Class: Biaxial (-). *Pleochroism:* Distinct; X = pale yellow; Y = yellow; Z = brownish yellow. *Dispersion:* $r < v$, strong. *Absorption:* $Z > Y \geq X$. $\alpha = 1.707$ $\beta = 1.745$ $\gamma = 1.776$ $2V(\text{meas.}) = 82^\circ$

Cell Data: *Space Group:* $Ima2$. $a = 10.55$ $b = 13.92$ $c = 8.10$ $Z = 4$

X-ray Powder Pattern: Wolgidee Hills, Western Australia; nearly identical to batisite. 2.911 (100), 3.201 (80), 3.399 (75), 2.634 (70), 2.191 (60), 2.102 (60), 1.680 (60)

Chemistry:	(1)	(2)		(1)	(2)
SiO ₂	40.61	40.72	MgO	0.26	0.56
TiO ₂	17.91	24.36	CaO	0.82	3.01
ZrO ₂	1.23		BaO	6.22	14.14
Al ₂ O ₃	0.76	0.00	Na ₂ O	5.82	3.77
RE ₂ O ₃	0.00		K ₂ O	12.29	11.19
Fe ₂ O ₃	1.80		F	0.00	
(Nb, Ta) ₂ O ₅	10.44		Cl	0.30	
FeO	0.47	1.79	H ₂ O ⁺	0.54	
MnO	0.04		H ₂ O ⁻	0.10	
			Total	99.61	99.54

(1) Khibiny massif, Russia; corresponds to $(\text{K}_{1.23}\text{Na}_{1.10}\text{Ba}_{0.24}\text{Ca}_{0.08}\text{Mg}_{0.04})_{\Sigma=2.69}(\text{Ti}_{1.31}\text{Nb}_{0.44}\text{Fe}_{0.17}\text{Zr}_{0.06})_{\Sigma=1.98}\text{Si}_{3.96}[\text{O}_{13.6}(\text{OH})_{0.4}]_{\Sigma=14.00}$. (2) Wolgidee Hills, Australia; by electron microprobe, corresponds to $(\text{K}_{1.43}\text{Na}_{0.73}\text{Ba}_{0.55}\text{Ca}_{0.32})_{\Sigma=3.03}(\text{Ti}_{1.83}\text{Fe}_{0.15}\text{Mg}_{0.08})_{\Sigma=2.06}\text{Si}_{4.07}\text{O}_{14}$.

Occurrence: Very rare, in pegmatite in a differentiated alkalic massif (Khibiny massif, Russia); in lamproite (Leucite Hills, Wyoming, USA).

Association: Natrolite, pectolite, albite, potassic feldspar, astrophyllite, apatite (Khibiny massif, Russia); priderite, jepeite, wadeite, perovskite, phlogopite, richterite (Wolgidee Hills, Western Australia).

Distribution: From Mts. Rasvumchorr and Yukspor, Khibiny massif, Kola Peninsula, Russia. In the Wolgidee Hills, West Kimberley district, Western Australia. From Emmons Mesa, Zirkel Mesa, and Black Butte, Leucite Hills, Sweetwater Co., Wyoming, USA.

Name: For Academician Demitrii Ivanovich Shcherbakov (1893–1966), Russian mineralogist and geochemist, Institute of Geology of Ore Deposits, Petrology, Mineralogy, and Geochemistry, Moscow, Russia.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 57256.

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