

Rippite**K₂(Nb, Ti)₂(Si₄O₁₂)O(O, F)**

Crystal Data: Tetragonal. *Point Group:* 4mm. As prismatic crystals to 2 mm.

Physical Properties: *Cleavage:* Very perfect on (001), perfect to distinct on (100). *Tenacity:* Brittle. *Fracture:* Stepped to uneven. VHN = 210-487, 307 average (50 g load). Hardness = 4-5 D(meas.) = 3.17(2) D(calc.) = 3.198 Weak fluorescence.

Optical Properties: Transparent to translucent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Uniaxial (+). $\omega = 1.737-1.739$ $\varepsilon = 1.747$ *Orientation:* X = c.

Cell Data: *Space Group:* P4bm. a = 8.73885(16) c = 8.1277(2) Z = 2

X-Ray Diffraction Pattern: Chuktukon massif, Chadobets upland, Krasnoyarsk Territory, Russia. 6.205 (100), 2.768 (99), 4.082 (90), 3.530 (87), 4.383 (83), 2.985 (81), 2.822 (70)

Chemistry:	(1)	(2)
SiO ₂	40.28	40.03
TiO ₂	1.11	
ZrO ₂	0.37	
Nb ₂ O ₅	42.30	44.28
Na ₂ O	0.01	
K ₂ O	15.77	15.69
F	0.32	
H ₂ O	0.18	
-O = F	0.14	
Total	99.20	100.00

(1) Chuktukon massif, Chadobets upland, Krasnoyarsk Territory, Russia; average electron microprobe analysis supplemented by IR and Raman spectroscopy; corresponds to K₂(Nb_{1.90}Ti_{0.09}Zr_{0.01})[Si₄O₁₂][O_{1.78}(OH)_{0.12}F_{0.10}]. (2) K₂Nb₂(Si₄O₁₂)O₂.

Polymorphism & Series: Possible limited solid solution with K₂Ti₂(Si₄O₁₂)F₂.

Occurrence: In calciocarbonatites in an alkaline ultramafic complex.

Association: Calcite, fluorcalciopyrochlore, tainiolite, fluorapatite, fluorite, Nb-rich rutile, olekminskite, K-feldspar, Fe-Mn-dolomite, quartz, goethite, francolite (Sr-rich carbonate-fluorapatite), psilomelane (romanèchite ± hollandite), barite, monazite-(Ce), parisite-(Ce), synchysite-(Ce), Sr-Ba-Pb-rich keno-/hydropyrochlore.

Distribution: From the Chuktukon massif, Chadobets upland, southwest Siberian Platform, Krasnoyarsk Territory, Russia.

Name: Honors German Samuilovich *Ripp* (b. 1935), an expert on carbonatite petrogenesis.

Type Material: Central Siberian Geological Museum, V.S. Sobolev Institute of Geology and Mineralogy, Siberian Branch of the RAS, Novosibirsk, Russia (XIII-347/1).

References: (1) Sharygin, V.V., A.G. Doroshkevich, Y.V. Seryotkin, N.S. Karmanov, E.V. Belogub, T.N. Moroz, E.N. Nigmatulina, A.P. Yelisseyev, V.N. Vedenyapin, and I.N. Kupriyanov (2020) Rippite, K₂(Nb,Ti)₂(Si₄O₁₂)O(O,F), a new K-Nb-cyclosilicate from Chuktukon Carbonatite Massif, Chadobets Upland, Krasnoyarsk Territory, Russia. *Minerals*, 10, 1102, 1-26.