

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As intergrowths of elongated bladed grains to 1 mm.

Physical Properties: *Cleavage:* n.d. *Tenacity:* Brittle. *Fracture:* n.d. Hardness = 5.5-6 VHN = 611-708, 650 average (100 g load). D(meas.) = 3.12(2) D(calc.) = 3.125

Optical Properties: Transparent. *Color:* Colorless, white because of cracks. *Streak:* n.d. *Luster:* Vitreous.

Optical Class: Biaxial (+). $\alpha = 1.616(2)$ $\beta = 1.645(2)$ $\gamma = 1.683(2)$ $2V(\text{meas.}) = 85(2)^\circ$ $2V(\text{calc.}) = 84^\circ$ *Dispersion:* Strong, $r < v$.

Cell Data: *Space Group:* $P\bar{1}$. $a = 10.4191(4)$ $b = 12.2408(5)$ $c = 7.0569(3)$ $\alpha = 90.857(1)^\circ$ $\beta = 99.193(1)^\circ$ $\gamma = 91.895(1)^\circ$ $Z = 2$

X-Ray Diffraction Pattern: Upper Darai-Piyoz alkaline massif, Tajikistan. 3.06 (100), 3.25 (25), 3.14 (21), 2.959 (20), 2.038 (17), 4.08 (13), 3.33 (11)

Chemistry:	(1)
SiO ₂	51.08
TiO ₂	8.94
Nb ₂ O ₅	0.64
FeO	0.50
MnO	2.59
CaO	10.98
Na ₂ O	3.76
K ₂ O	6.13
Cs ₂ O	15.28
<u>H₂O</u>	<u>[1.09]</u>
Total	100.99

(1) Upper Darai-Piyoz alkaline massif, Tajikistan; average electron microprobe analysis supplemented by IR spectroscopy, H₂O calculated from structure; corresponds to Cs_{0.90}K_{1.08}Na_{1.00}(Ca_{1.62}Mn_{0.30}Fe_{0.06}) $\Sigma=1.98$ (Ti_{0.93}Nb_{0.04}) $\Sigma=0.97$ O_{0.97}[Si₇O₁₈(OH)].

Mineral Group: Chain silicate.

Occurrence: In the moraine of a glacier.

Association: Pectolite, quartz, aegirine, fluorite, polyolithionite, neptunite, hyalotekite, baratovite, sokolovaite, pekovite.

Distribution: From the Upper Darai-Piyoz alkaline massif, Alai mountain ridge, Tien-Shan Mountains, northern Tajikistan.

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Type Material: A.E. Fersman Mineralogical Museum, RAS, Moscow, Russia (92107).

References: (1) Agakhanov, A.A, L.A. Pautov, Y.A. Uvarova, E.V. Sokolova, F.C. Hawthorne, and V.Y. Karpenko (2005) Senkevichite CsKNaCa₂TiO[Si₇O₁₈(OH)], a new mineral. *New Data on Minerals*. Moscow 40, 17-22. (2) Uvarova, Y.A, E. Sokolova, F.C. Hawthorne, A.A. Agakhanov, L.A. Pautov, and V.Y. Karpenko (2006) The crystal chemistry of senkevichite, CsKNaCa₂TiO[Si₇O₁₈(OH)], from the Dara-i-Poiz alkaline massif, northern Tajikistan. *Can. Mineral.*, 44, 1341-1348.