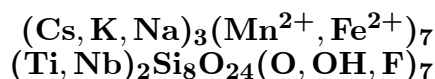


Cesium kupletskite



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Crystal Data: Triclinic. *Point Group:* n.d. As rosettelike intergrowths of curved platy crystals, forming aggregates, to 3 cm.

Physical Properties: *Cleavage:* {001}, perfect. Hardness = ~4 VHN = 186
D(meas.) = 3.68 D(calc.) = [3.62]

Optical Properties: Semitransparent. *Color:* Golden brown. *Luster:* Dull.
Optical Class: Biaxial (+). *Pleochroism:* X = yellow-green; Y = yellow to brown; Z = brown.
Orientation: Z = a; Y $\wedge$ b $\simeq$ 10°. α = n.d. β = 1.726 γ = 1.758 2V(meas.) = 75°

Cell Data: *Space Group:* n.d. $a = 5.41(1)$ $b = 11.74(2)$ $c = 21.16(4)$ $\alpha = 89^\circ$ $\beta = 90^\circ$
 $\gamma = 102^\circ 23'$ Z = 2

X-ray Powder Pattern: Alai Range, Tajikistan.
10.4 (100), 3.54 (80), 2.79 (80), 2.66 (80), 2.58 (60), 1.772 (40), 4.09 (30)

Chemistry:		(1)		(1)
	SiO ₂	33.00	CaO	0.35
	TiO ₂	8.28	Li ₂ O	0.46
	ZrO ₂	1.01	Na ₂ O	2.46
	Al ₂ O ₃	0.52	K ₂ O	1.15
	Fe ₂ O ₃	3.05	Rb ₂ O	0.18
	Nb ₂ O ₅	4.95	Cs ₂ O	11.60
	Ta ₂ O ₅	0.06	F	1.26
	FeO	10.00	H ₂ O ⁺	1.47
	MnO	19.66	−O = F ₂	0.54
	MgO	trace	Total	98.92

(1) Alai Range, Tajikistan; corresponds to $(\text{Cs}_{1.22}\text{Na}_{1.14}\text{K}_{0.35}\text{Ca}_{0.09})_{\Sigma=2.80}(\text{Mn}_{3.99}\text{Fe}_{2.00}^{2+}\text{Fe}_{0.55}^{3+}\text{Li}_{0.44})_{\Sigma=6.98}(\text{Ti}_{1.49}\text{Nb}_{0.54}\text{Zr}_{0.12})_{\Sigma=2.15}(\text{Si}_{7.92}\text{Al}_{0.15})_{\Sigma=8.07}\text{O}_{24}[\text{O}_{3.69}(\text{OH})_{2.35}\text{F}_{0.96}]_{\Sigma=7.00}$.

Polymorphism & Series: Forms a series with kupletskite.

Mineral Group: Astrophyllite group.

Occurrence: At the border of aegirine-microcline-quartz pegmatites, and in polyolithionite-quartz replacement complexes in pegmatites.

Association: Pyrochlore, stillwellite, tienshanite, sogdianite, thorite.

Distribution: In the Dara-i-Pioz massif, Alai Range, Tien Shan, Tajikistan.

Name: For the *cesium* in the composition and similarity to *kupletskite*.

Type Material: Mineralogical Museum, St. Petersburg University, St. Petersburg, 16537; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 74170.

References: (1) Efimov, A.F., V.D. Dusmatov, A.A. Ganzeev, and Z.T. Kataeva (1971) Cesium kupletskite, a new mineral. Doklady Acad. Nauk SSSR, 197, 1394–1397 (in Russian). (2) (1972) Amer. Mineral., 57, 328 (abs. ref. 1).