

Tianshanite**Na₂BaMn²⁺TiB₂Si₆O₂₀**

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Crystal Data: Hexagonal. *Point Group:* 6/*m*. Microcrystalline monomineralic aggregates, to 6 cm.

Physical Properties: *Cleavage:* {001}, distinct. *Tenacity:* Brittle. Hardness = 6–6.5
D(meas.) = 3.29 D(calc.) = [3.14]

Optical Properties: Transparent to translucent. *Color:* Pistachio-green. *Luster:* Vitreous.
Optical Class: Uniaxial (-). $\omega = 1.666$ $\epsilon = 1.653$

Cell Data: *Space Group:* P6/*m*. $a = 16.722(5)$ $c = 10.434(4)$ $Z = 6$

X-ray Powder Pattern: Dara-i-Pioz massif, Tajikistan.

4.19 (100), 3.18 (90), 3.47 (80), 2.803 (50), 2.419 (50), 10.5 (35), 3.89 (30)

Chemistry:

	(1)		(1)
SiO ₂	43.24	MgO	trace
TiO ₂	6.90	CaO	1.95
B ₂ O ₃	7.50	BaO	18.00
Fe ₂ O ₃	1.00	Na ₂ O	5.93
Ta ₂ O ₅	0.84	K ₂ O	2.12
Nb ₂ O ₅	4.14	H ₂ O ⁺	0.00
MnO	7.80	Total	99.42

(1) Dara-i-Pioz massif, Tajikistan; corresponds to (Ba_{0.97}K_{0.13})_{Σ=1.10}(Na_{1.58}Ca_{0.29}K_{0.24})_{Σ=2.11}(Mn_{0.91}²⁺Fe_{0.10}³⁺)_{Σ=1.01}(Ti_{0.72}Nb_{0.26}Ta_{0.03})_{Σ=1.01}B_{1.78}Si_{5.93}O_{19.96}.

Occurrence: In the central portions of alkalic pegmatites in syenite.

Association: Pyrochlore, astrophyllite, bafertisite, stillwellite, danburite, galena, titanite, calcite, datolite.

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

Name: For the occurrence in the Tien Shan (Tien Mountains), Tajikistan.

Type Material: Mineralogical Museum, St. Petersburg University, St. Petersburg, 16249; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 70146.

References: (1) Dusmatov, V.D., A.F. Efimov, V.Y. Alkhazov, M.E. Kazakova, and N.G. Mumyatskaya (1967) Tianshanite, a new mineral. *Doklady Acad. Nauk SSSR*, 177, 678–680 (in Russian). (2) (1968) *Amer. Mineral.*, 53, 1426 (abs. ref. 1). (3) Malinovskii, Y.A., E.A. Pobedimskaya, and N.V. Belov (1977) Crystal structure of tianshanite. *Doklady Acad. Nauk SSSR*, 236, 863–865 (in Russian). (4) (1979) *Mineral. Abs.*, 30, 217 (abs. ref. 3).