

# Mongolite

# $\text{Ca}_4\text{Nb}_6\text{Si}_5\text{O}_{24}(\text{OH})_{10} \cdot 5-6\text{H}_2\text{O}$

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**Crystal Data:** Tetragonal. *Point Group:* n.d. As a micalike aggregate of fine scales.

**Physical Properties:** *Cleavage:* One direction, good. Hardness = 2 D(meas.) = 3.147, possibly lowered by admixed quartz. D(calc.) = [3.53]

**Optical Properties:** Translucent. *Color:* Pale lilac or grayish lilac. *Luster:* Silky. *Optical Class:* Uniaxial (-).  $\omega = 1.80$   $\epsilon = 1.74$

**Cell Data:** *Space Group:* n.d.  $a = 7.00(5)$   $c = 29.0(1)$   $Z = 2$

**X-ray Powder Pattern:** Khan-Bogdinskii massif, Mongolia.

3.163 (100), 2.974 (70), 3.087 (65), 9.67 (45), 5.82 (45), 2.664 (40), 2.901 (35)

## Chemistry:

	(1)	(2)
SiO <sub>2</sub>	22.05	22.34
TiO <sub>2</sub>	0.02	0.07
Al <sub>2</sub> O <sub>3</sub>	0.81	0.86
Nb <sub>2</sub> O <sub>5</sub>	53.13	51.77
MnO	1.15	0.86
ZnO	0.41	0.90
MgO	0.07	0.12
CaO	12.38	11.97
SrO	2.11	1.83
BaO	0.71	0.73
Na <sub>2</sub> O	0.72	0.26
K <sub>2</sub> O	0.49	0.38
H <sub>2</sub> O	6.70	8.74
Total	[100.75]	[100.83]

(1) Khan-Bogdinskii massif, Mongolia; by electron microprobe, original total given as 100.76%; corresponds to  $(\text{Ca}_{3.01}\text{Na}_{0.31}\text{Sr}_{0.28}\text{K}_{0.14}\text{Ba}_{0.06})_{\Sigma=3.80}(\text{Nb}_{5.45}\text{Al}_{0.22}\text{Mn}_{0.22}\text{Zn}_{0.07}\text{Mg}_{0.03})_{\Sigma=5.99}\text{Si}_5\text{O}_{27.84} \cdot 5.07\text{H}_2\text{O}$ . (2) Do.; original total given as 100.82%; corresponds to  $(\text{Ca}_{2.87}\text{Sr}_{0.24}\text{Na}_{0.11}\text{K}_{0.11}\text{Ba}_{0.06})_{\Sigma=3.39}(\text{Nb}_{5.24}\text{Al}_{0.23}\text{Mn}_{0.16}\text{Zn}_{0.15}\text{Mg}_{0.04})_{\Sigma=5.82}\text{Si}_5\text{O}_{27.07} \cdot 6.53\text{H}_2\text{O}$ .

**Occurrence:** In the quartz-rich core zone of an alkalic pegmatite, as a late-stage alteration product of a niobium silicate.

**Association:** Polyolithionite, zincian montmorillonite, niobium and rare-earth silicates.

**Distribution:** At the Dorozhny site, northern Khan-Bogdinskii granitic massif, Gobi, Mongolia.

**Name:** For Mongolia, the country where the mineral was discovered.

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

**References:** (1) Vladykin, N.V., V.A. Drits, V.I. Kovalenko, M.D. Dorfman, V.S. Malov, and A.I. Gorshkov (1985) A new silicate of niobium, mongolite  $\text{Ca}_4\text{Nb}_6[\text{Si}_5\text{O}_{20}]\text{O}_4(\text{OH})_{10} \cdot n\text{H}_2\text{O}$ . Zap. Vses. Mineral. Obshch., 114, 374-377 (in Russian). (2) (1986) Amer. Mineral., 71, 1279 (abs. ref. 1).