

Umbozerite

$\text{Na}_3\text{Sr}_4\text{ThSi}_8(\text{O}, \text{OH})_{24}$

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Crystal Data: Metamict; tetragonal after recrystallization. *Point Group:* n.d. As acicular prismatic crystals, to 1.5 cm, sometimes curved; as irregular segregations.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = ~5 VHN = 470–535, 506 average. D(meas.) = 3.60 D(calc.) = n.d. Radioactive.

Optical Properties: Translucent to transparent. *Color:* Bottle-green to mottled greenish brown. *Luster:* Vitreous. *Optical Class:* Isotropic. $n = 1.640$

Cell Data: *Space Group:* n.d. $Z = \text{n.d.}$

X-ray Powder Pattern: Mt. Karnasurt, Russia; pattern after heating to 1100 °C. 3.29 (100), 1.701 (80), 3.38 (60), 1.999 (60), 2.98 (50), 2.82 (50), 2.09 (45)

Chemistry:	(1)	(1)
SiO ₂	37.1	CaO 0.2
TiO ₂	0.3	SrO 27.7
ThO ₂	17.6	BaO 2.0
Ce ₂ O ₃	0.3	Na ₂ O 6.13
Fe ₂ O ₃	1.8	K ₂ O 0.74
U ₃ O ₈	0.4	LOI 0.43
MnO	2.2	Total 96.8

(1) Mt. Karnasurt, Russia; by electron microprobe and flame photometry, average of six analyses; corresponds to $(\text{Na}_{2.56}\text{K}_{0.19})_{\Sigma=2.75}(\text{Sr}_{3.46}\text{Mn}_{0.40}\text{Ba}_{0.17}\text{Ca}_{0.05})_{\Sigma=4.08}(\text{Th}_{0.86}\text{Fe}_{0.30}\text{Ti}_{0.05}\text{U}_{0.02}\text{Ce}_{0.02})_{\Sigma=1.25}\text{Si}_8\text{O}_{23.35}(\text{OH})_{0.68}$.

Occurrence: In pneumatolytic-hydrothermal veins cutting alkalic rocks in the upper part of a differentiated alkalic massif.

Association: Ussingite, sphalerite, belovite, manganoan pectolite, lorenzenite, niobium-bearing minerals of the lomonosovite group.

Distribution: Found on Mts. Karnasurt and Punkaruaiiv, near Lake Umba, Lovozero massif, Kola Peninsula, Russia.

Name: For Lake Umbozero, Kola Peninsula, Russia, near where the mineral was discovered.

Type Material: Mining Institute, St. Petersburg, 992/1; Institute of Mineralogy and Geochemistry of Rare Elements, Moscow; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 75150; National School of Mines, Paris, France.

References: (1) Es'kova, Y.M., E.I. Semenov, A.P. Khomyakov, A.N. Mer'kov, S.I. Lebedeva, and L.S. Dubakina (1974) Umbozerite, a new mineral. Doklady Acad. Nauk SSSR, 216, 169–174 (in Russian). (2) (1975) Amer. Mineral., 60, 341 (abs. ref. 1).