Korobitsynite $(Na, \square)_4Ti_2(Si_4O_{12})(O, OH)_2 \cdot 4H_2O$

Crystal Data: Orthorhombic. *Point Group*: 2/*m* 2/*m* 2/*m*. As prismatic grains and needle-like crystals to 2 cm, showing {110}, {001}, {010}, {100}, and {021}. Epitaxial intergrowths with elpidite and irregular intergrowths with labuntsovite are common.

Physical Properties: *Cleavage*: Imperfect on {001}. *Tenacity*: Brittle. *Fracture*: Uneven. Hardness = ~5 VHN = 620(50) (25 g load). D(meas.) = 2.72 D(calc.) = 2.68
Korobitsynite and nenadkevichite are megascopically indistinguishable.

Optical Properties: Transparent. *Color*: Colorless. *Luster*: Vitreous.
Optical Class: Biaxial (+) α = 1.646-1.650(2) β = 1.654-1.658(2) γ = 1.763-1.780(5)
2V(meas.) = 30° *Orientation*: *X* = *b*, *Y* = *c*, *Z* = *a*.

Cell Data: Space Group: *Pbam*. *a* = 7.349(2) *b* = 14.164(2) *c* = 7.130(1) Z = 2

X-ray Powder Pattern: Lovozero massif, Kola Peninsula, Russia.
3.262 (100), 6.53 (85), 7.09 (79), 2.075 (57), 2.553 (56), 3.180 (52)

Chemistry:

	(1)
Na_2O	13.87
K_2O	0.03
BaO	0.54
ZrO_2	0.04
TiO_2	21.38
SiO_2	40.91
Nb_2O_5	10.14
H_2O	12.20
Total	99.11

(1) Lovozero massif, Kola Peninsula, Russia; by electron microprobe analysis, H_2O by TGA; corresponding to $Na_{2.62}Ba_{0.02}(Ti_{1.57}Nb_{0.45})_{\Sigma=2.02}[Si_4O_{12}][(OH)_{1.13}O_{1.03}]_{\Sigma=2.16} \cdot 3.4H_2O$.

Mineral Group: Labuntsovite-group, nenadkevichite subgroup.

Occurrence: In miarolitic cavities in pegmatite.

Association: At Mt. Alluaiv: albite, aegirine, shortite, rhodochrosite, epididymite, leifite, tainiolite, pyrrhotite, thermonatrite, nahpoite, amorphous bitumen; or albite, aegirine, elpidite, lorenzenite, sphalerite, galena, shomiokite-(Y), trona, natron, natroxalate; or elpidite, quartz, epididymite, aegirine, sidorenkite, sphalerite, löllingite, pyrrhotite, belovite-(Ce). At Mt. Kasnasurt: in nests of a cryptocrystalline Na-Fe hydrosilicate, natrolite, apophyllite, fluorite, sphalerite, galena, molybdenite.

Distribution: At Mts. Alluaiv and Karnasurt, Lovozero massif, Kola Peninsula, Russia. From the Aris phonolites, Windhoek, Namibia.

Name: For amateur mineralogist Mikhail Fyodorovich *Korobitsyn* (1928-1996), for significant contributions to the mineralogy of the Lovozero massif.

Type Material: A.E. Fersman Mineralogical Museum, Moscow, Russia.

References: (1) Pekov, I.V., N.V. Chukanov, A.P. Khomyakov, R.K. Rastsvetaeva, Ya.V. Kucherinenko, and V.V. Nedel'ko (1999) Korobitsynite, $Na_{3-x}(Ti,Nb)_2[Si_4O_{12}](OH,O)_2 \cdot 3\text{-}4H_2O$, a new mineral from Lovozero massif, Kola Peninsula. Zapiski VMO, 3, 72-79 (in Russian). (2) (2000) Amer. Mineral., 85, 1322-1323 (abs. ref. 1). (3) Chukanov, N.V., I.V. Pekov, and A.P. Khomyakov (2002) Recommended nomenclature for labuntsovite-group minerals. Eur. J. Mineral., 14, 165-173. (4) Niedermayr, G., R. Gault, A. Petersen, and O.V.F. Brandstätter (2002) Korobitsynite from the Aris phonolites, Windhoek, Namibia. N. Jb. Miner. Mh., 42-48.