

**Crystal Data:** Hexagonal. *Point Group:* 622. As crystals with square, rectangular, or hexagonal outlines, to 2 mm; may be included in microlite.

**Physical Properties:** Hardness = n.d. VHN = 970 (40 g load). D(meas.) = 7.46 D(calc.) = 6.735 (Nb rich) to 7.40 Weak blue cathodoluminescence.

**Optical Properties:** Transparent. *Color:* Colorless. *Luster:* Adamantine. *Optical Class:* Uniaxial. R<sub>1</sub>-R<sub>2</sub>: (486) 16.9-16.3, (551) 17.0-16.6, (589) 17.1-16.7, (656) 18.2-18.0

**Cell Data:** *Space Group:* P6<sub>3</sub>22. *a* = 6.2261(6) *c* = 12.280(1) *Z* = 2

**X-ray Powder Pattern:** Mt. Vasin-Myl'k, Russia. 3.02 (10), 1.508 (10), 2.78 (9), 3.15 (7), 1.793 (7), 1.551 (7), 2.47 (6)

Chemistry:	(1)	(2)	(3)	(4)
Nb <sub>2</sub> O <sub>5</sub>	2.84	6.54	18.67	
Ta <sub>2</sub> O <sub>5</sub>	91.09	87.18	74.09	94.03
SnO <sub>2</sub>		0.55		
PbO		0.09		
CaO	6.05	5.51	6.44	5.97
Na <sub>2</sub> O	0.05	0.47		
Total	100.03	100.34	99.20	100.00

(1) Mt. Vasin-Myl'k, Russia; corresponds to (Ca<sub>0.99</sub>Na<sub>0.01</sub>)<sub>Σ=1.00</sub>(Ta<sub>3.20</sub>Nb<sub>0.80</sub>)<sub>Σ=4.00</sub>O<sub>11</sub>. (2) Do.; by electron microprobe, corresponds to (Ca<sub>0.88</sub>Na<sub>0.14</sub>)<sub>Σ=1.02</sub>(Ta<sub>3.52</sub>Nb<sub>0.44</sub>Sn<sub>0.03</sub>)<sub>Σ=3.99</sub>O<sub>10.90</sub>. (3) Nyköpingsgruvan pegmatite, Utö, Stockholm Archipelago, Sweden; average electron microprobe analysis; corresponds to Ca<sub>0.97</sub>Ta<sub>2.85</sub>Nb<sub>1.16</sub>O<sub>11</sub>. (4) CaTa<sub>4</sub>O<sub>11</sub>.

**Occurrence:** In the albite-spodumene zone of granite pegmatites.

**Association:** Microlite, scheelite, wadginitite, apatite (Mt. Vasin-Myl'k, Russia); cassiterite, lithiotantite, microlite, thoreaulite, cesplumtantite (Manono pegmatite, Congo).

**Distribution:** From Mt. Vasin-Myl'k, Voron'i massif, Kola Peninsula, Russia. At Ungursai, eastern Kazakhstan. In the Manono pegmatite, Katanga Province, Congo (Shaba Province, Zaire). In the northern Nyköpingsgruvan granitic pegmatite, island of Utö, Stockholm Archipelago, Sweden.

**Name:** For CALCIum and TANTalum in the composition.

**Type Material:** Geology Museum, Kola Branch, Academy of Sciences, Apatity, 5702/1 and A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 81392.

**References:** (1) Voloshin, A.V., Y.A. Pakhomovskii, and F.M. Tyusheva (1982) Calciotantite, CaTa<sub>4</sub>O<sub>11</sub>, a new mineral from granitic pegmatites of the Kola Peninsula. Mineral. Zhurnal, 4(3), 75-79 (in Russian with English abs.). (2) (1983) Amer. Mineral., 68, 471 (abs. ref. 1). (3) Voloshin, A.V., Y.A. Pakhomovskii, L.V. Bulgak, and G.A. Perlina (1985) Ungursaitite [calciotantite] - a new tantalate of calcium and sodium from granitic pegmatites. Mineral. Zhurnal, 7(4), 88-94 (in Russian with English abs.). (4) Yamnova, N.A., D.Y. Pushcharovskii, and A.V. Voloshin (1988) Identity of ungursaitite with calciotantite and synthetic CaTa<sub>4</sub>O<sub>11</sub>. Kristallografiya (Sov. Phys. Crystal.), 33, 845-847 (in Russian). (5) Cooper, M.A., F.C. Hawthorne, and P. Černý (1999) Ta-Nb order in the crystal structure of niobium-rich calciotantite. Can. Mineral., 37, 1289-1294.