Lithiotantite $Li(Ta,Nb)_3O_8$

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Crystal Data: Monoclinic. *Point Group:* $2/m$. In rough crystals, equant, to 0.4 mm.

Physical Properties: *Fracture:* Conchoidal to uneven. *Tenacity:* Brittle. Hardness = 6–6.5 VHN = 1200 (40 g load). D(meas.) = 7.0 D(calc.) = 7.08 Weak yellow-green cathodoluminescence.

Optical Properties: Transparent. *Color:* Colorless, creamy pink to brownish pink when included by cassiterite; grayish white under reflected light. *Luster:* Adamantine.
Optical Class: Biaxial; strong birefingence. *Dispersion:* Strong. $n = > 1.9$ 2V(meas.) = n.d. *Anisotropism:* Weak.
R_1–R_2: (486) 18.6–18.5, (553) 18.5–18.3, (589) 18.6–18.3, (656) 19.1–19.0

Cell Data: *Space Group:* $P2_1/c$. $a = 7.444$ $b = 5.044$ $c = 15.255$ $\beta = 107.18°$ Z = 4

X-ray Powder Pattern: "Eastern Kazakhstan".
2.96 (100), 1.722 (80), 1.451 (80), 1.772 (60b), 4.13 (5), 2.490 (5), 1.900 (5)

Chemistry:

	(1)
Nb_2O_5	24.96
Ta_2O_5	71.55
SnO_2	0.57
Li_2O	2.33
Total	99.41

(1) "Eastern Kazakhstan"; by electron microprobe, Li_2O by AA; corresponds to $Li_{0.92}(Ta_{1.90}Nb_{1.10}Sn_{0.02})_{\Sigma=3.02}O_8$.

Occurrence: In microcline-albite zones of granite pegmatites.

Association: Lepidolite, apatite, albite, thoreaulite, cassiterite, rankamaite, irtyshite ("Eastern Kazakhstan"); cassiterite, calciotantite, microlite, thoreaulite, cesplumtantite (Manono pegmatite, Congo).

Distribution: From the Ognevka tantalum deposit, Kalba Mountains, eastern Kazakhstan. In the Manono pegmatite, Katanga Province, Congo (Shaba Province, Zaire).

Name: For LITHIum and TANTalum in its composition.

Type Material: Mining Institute, St. Petersburg, 1655/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 82543.

References: (1) Voloshin, A.V., Y.A. Pakhomovskii, V.I. Stepanov, and F.N. Tyusheva (1983) Lithiotantite $Li(Ta,Nb)_3O_8$ – a new mineral from granite pegmatites in Eastern Kazakhstan. Mineral. Zhurnal, 5(1), 91–95 (in Russian with English abs.). (2) (1984) Amer. Mineral., 69, 1191–1192 (abs. ref. 1).

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