

Laplandite-(Ce)**Na₄CeTiPSi₇O₂₂•5H₂O**

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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As prismatic plates, flattened $\perp \{001\}$, about 0.01 mm; also as radiating fibrous or fan-shaped platy aggregates, to 1 cm.

Physical Properties: *Fracture:* Splintery. Hardness = 2–3 D(meas.) = 2.83
D(calc.) = 2.71

Optical Properties: Transparent to translucent. *Color:* Light gray to yellowish, rarely bluish; colorless in thin section. *Luster:* Vitreous to greasy.

Optical Class: Biaxial (–). $\alpha = 1.568$ $\beta = 1.584$ $\gamma = 1.585$ 2V(meas.) = n.d.
2V(calc.) = 28°

Cell Data: *Space Group:* $Pmmm$. $a = 7.27$ $b = 14.38$ $c = 22.25$ $Z = 4$

X-ray Powder Pattern: Mt. Karnasurt, Russia.

7.27 (100), 3.76 (100), 3.35 (100), 3.03 (100), 3.36 (80), 2.80 (80), 6.47 (70)

Chemistry:	(1)	(2)		(1)	(2)
SiO ₂	40.94	44.29	MgO	1.02	
TiO ₂	4.08	8.41	CaO	0.56	
ThO ₂	1.32		Na ₂ O	9.81	13.05
Al ₂ O ₃	0.94		K ₂ O	1.88	
Ce ₂ O ₃		17.28	H ₂ O ⁺	8.96	
RE ₂ O ₃	16.79		H ₂ O [–]	0.37	
Fe ₂ O ₃	0.64		H ₂ O		9.49
Nb ₂ O ₅	1.88		P ₂ O ₅	9.62	7.48
MnO	0.20		Total	99.01	100.00

(1) Mt. Karnasurt, Russia; RE ratios La:Ce:Pr:Nd = 46.7:51.2:5.2:6.6 by X-ray spectrographic analysis. (2) Na₄CeTiPSi₇O₂₂•5H₂O.

Occurrence: In the natrolite zone of a pegmatite in a differentiated alkalic massif.

Association: Belovite, nordite, sérandite, thermonatrite, steenstrupine, leucosphenite, sphalerite, ilmajokite, raite, zorite.

Distribution: In the Jubilee pegmatite, on Mt. Karnasurt, Lovozero massif, Kola Peninsula, Russia.

Name: For Lapland (Lapland), the region in which the Kola Peninsula lies.

Type Material: Institute of Mineralogy and Geochemistry of Rare Elements, Moscow; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 75512, 76312.

References: (1) Eskova, E.M., E.I. Semenov, A.P. Khomyakov, M.E. Kazakova, and O.V. Sidorenko (1974) Laplandite, a new mineral. Zap. Vses. Mineral. Obshch., 103, 571–575 (in Russian). (2) (1975) Amer. Mineral., 60, 487 (abs. ref. 1).