

Zorite**Na₆(Ti, Nb)₅(Si₆O₁₇)₂(O, OH)₅ · 11H₂O(?)**

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Crystal Data: Orthorhombic. *Point Group:* 2/m 2/m 2/m or mm2. As intergrowths of prismatic, acicular crystals, to 2 mm, and as polycrystalline plates, perhaps pseudomorphs.

Physical Properties: *Cleavage:* {010} and {001}, perfect; {110}, less so. *Hardness* = 3–4
D(meas.) = 2.27–2.40 D(calc.) = 2.23

Optical Properties: Semitransparent. *Color:* Rose. *Luster:* Vitreous.
Optical Class: Biaxial. *Pleochroism:* X = rose; Y = nearly colorless; Z = bluish. α = n.d.
 β = n.d. γ = n.d. 2V(meas.) = n.d.

Cell Data: *Space Group:* Cmc₂m, Cmc2₁, or C2cm. a = 23.9(1) b = 7.23(2)
c = 14.24(5) Z = 6

X-ray Powder Pattern: Lovozero massif, Russia.
6.9 (100), 11.6 (80), 3.38 (80), 3.067 (80), 2.979 (80), 2.588 (80), 1.742 (80)

Chemistry:	(1)		(1)
SiO ₂	41.70	Na ₂ O	15.09
TiO ₂	15.21	K ₂ O	0.69
ZrO ₂	0.21	F	0.29
Al ₂ O ₃	4.92	H ₂ O ⁺	11.31
Fe ₂ O ₃	0.53	H ₂ O ⁻	3.17
(Nb, Ta) ₂ O ₅	5.95	CO ₂	0.18
MnO	0.10	P ₂ O ₅	0.05
MgO	0.10	<u>-O = F₂</u>	0.11
CaO	0.58	Total	99.97

(1) Lovozero massif, Russia; spectrographic traces of Ta, Pb, Ba, Be.

Occurrence: On walls of fractures filled with nepheline in the central natrolite region of a pegmatite vein in a differentiated alkalic massif.

Association: Nepheline, aegirine, mountainite, natrolite, raite.

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

Name: In reference to the Russian for “the rosy radiance of the sky at dawn” for the color.

Type Material: Geology Museum, Kola Branch, Academy of Sciences, Apatity, 3144, 3207; Mineralogical Museum, St. Petersburg University, St. Petersburg, 15286, 18102, 18155; Mining Institute, St. Petersburg, 1059/1–5; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 74486–74488.

References: (1) Mer'kov, A.N., I.V. Bussen, E.A. Goiko, E.A. Kul'chitskaya, Y.P. Men'shikov, and A.P. Nedorezova (1973) Raite and zorite, new minerals from the Lovozero Tundra. Zap. Vses. Mineral. Obshch., 102, 54–62 (in Russian). (2) (1973) Amer. Mineral., 58, 1113–1114 (abs. ref. 1). (3) Sandomirskii, P.A. and N.V. Belov (1979) The OD structure of zorite. Kristallografiya (Sov. Phys. Crystal.), 24, 1198–1210 (in Russian).