

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As split and blocky rectangular or irregular plates flattened on (001), to 3 cm.

Physical Properties: *Cleavage:* Perfect on {001}. *Tenacity:* Brittle. *Fracture:* Stepped. Hardness = 2.5-3 D(meas.) = 3.03(2) D(calc.) = 2.97

Optical Properties: Transparent to translucent. *Color:* Pale pink, yellowish pink, colorless. *Streak:* White. *Luster:* Vitreous.

Optical Class: Biaxial (-). $\alpha = 1.755(5)$ $\beta = 1.820(10)$ $\gamma = 1.835(8)$ $2V(\text{meas.}) = 45(10)^\circ$ $2V(\text{calc.}) = 50^\circ$ *Dispersion:* $r < v$, strong. *Pleochroism:* None.

Cell Data: Space Group: $P\bar{1}$. $a = 8.743(9)$ $b = 8.698(9)$ $c = 11.581(11)$ $\alpha = 91.54(8)^\circ$ $\beta = 98.29(8)^\circ$ $\gamma = 105.65(8)^\circ$ $Z = 2$

X-ray Powder Pattern: Lovozero alkaline massif, Kola Peninsula, Russia. (similar to murmanite) 2.861 (100), 11.7 (67), 4.17 (65), 5.73 (54), 8.27 (50), 6.94 (43), 2.609 (30)

Chemistry:	(1)		(1)
Na ₂ O	0.98	Al ₂ O ₃	0.36
K ₂ O	0.30	SiO ₂	32.29
CaO	0.56	TiO ₂	29.14
SrO	0.05	ZrO ₂	2.08
BaO	0.44	Nb ₂ O ₅	7.34
MgO	0.36	F	0.46
MnO	2.09	H ₂ O	9.1
ZnO	14.39	<u>-O=F₂</u>	<u>0.19</u>
Fe ₂ O ₃	2.00	Total	101.75

(1) Lovozero alkaline massif, Kola Peninsula, Russia; average of 9 electron microprobe analyses, H₂O by modified Penfield method, corresponds to H_{7.42}(Zn_{1.30}Na_{0.23}Mn_{0.22}Ca_{0.07}Mg_{0.07}K_{0.05}Ba_{0.02}) $\Sigma=1.96$ (Ti_{2.68}Nb_{0.41}Fe³⁺_{0.18}Zr_{0.12}) $\Sigma=3.39$ (Si_{3.95}Al_{0.05}) $\Sigma=4$ O_{20.31}F_{0.18}.

Mineral Group: Epistolite group.

Occurrence: In a zoned peralkaline pegmatite located in foyaite and lujavrite rocks of a layered alkaline igneous complex. Found at the periphery of the ussingite core near its contact with the aegirine-eudialyte zone.

Association: Microcline, ussingite, aegirine, analcime, natrolite, gmelinite-Na, gmelinite-K, chabazite-Ca.

Distribution: From pegmatite 71, Malyi Punkaruai Mt., Lovozero alkaline massif, Kola Peninsula, Russia.

Name: Honors the Russian amateur mineralogist and mineral collector Viktor G. Grishin (b. 1953) for his significant contribution to the mineralogy of the Lovozero complex, Russia.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia; 4256/1.

References: (1) Pekov, I.V., S.N. Britvin, N.V. Zubkova, N.V. Chukanov, I.A. Bryzgalov, I.S. Lykova, D.I. Belakovskiy, and D.Yu. Pushcharovskiy (2012) Vigrishinite, $\text{Zn}_2\text{Ti}_{4-x}\text{Si}_4\text{O}_{14}(\text{OH},\text{H}_2\text{O},\square)_8$, a new mineral from Lovozero alkaline massif (Kola Peninsula, Russia). *Zap. Ross. Mineral. Obshch.*, 141(4), 12-27 (in Russian, English abstract). (2) (2013) *Amer. Mineral.*, 98, 2204 (abs. ref. 1).