

Crystal Data: Monoclinic. *Point Group:* 2/m. Forms rims (to 0.05 mm thick) on lepidolite and as clusters of tabular grains to 0.25 mm.

Physical Properties: *Cleavage:* Perfect on {001}. *Tenacity:* Flexible. *Fracture:* n.d. Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.95

Optical Properties: Transparent. *Color:* Colorless. *Streak:* n.d. *Luster:* Vitreous. *Optical Class:* Biaxial (-). $\alpha = 1.586$ (calculated) $\beta = 1.586$ $\gamma = 1.590$ $2V(\text{meas.}) = 25^\circ$ *Orientation:* $Y = b, Z = a$.

Cell Data: *Space Group:* C2/c. $a = 5.191$ $b = 9.025$ $c = 20.40$ $\beta = 95.37^\circ$ $Z = 4$

X-Ray Diffraction Pattern: Mt. Vasin-Myl'k, Voron'f Tundras, Kola Peninsula, Russia. 2.575 (100), 4.55 (80), 10.1 (60), 3.35 (60), 3.49 (50), 2.017 (50), 3.02 (45)

Chemistry:	(1)		(1)
Na ₂ O	0.03	MnO	0.14
K ₂ O	3.70	Al ₂ O ₃	21.33
Rb ₂ O	12.18	SiO ₂	53.14
Cs ₂ O	2.02	F	6.41
Li ₂ O	4.0	<u>-O = F₂</u>	<u>2.70</u>
CaO	0.03	Total	100.30
MgO	0.02		

(1) Mt. Vasin-Myl'k, Voron'f Tundras, Kola Peninsula, Russia; average electron microprobe analysis, Li by ICP-OES; corresponds to (Rb_{0.54}K_{0.33}Cs_{0.06}) $\Sigma=0.93$ (Al_{1.42}Li_{1.11}Mn_{0.01}) $\Sigma=2.54$ (Si_{3.68}Al_{0.32}) $\Sigma=4$ O₁₀[F_{1.40}(OH)_{0.60}] $\Sigma=2$.

Polymorphism & Series: Continuous solid-solution series with lepidolite; 2M₁ polytype.

Mineral Group: Mica group.

Occurrence: In veinlets or pods inside pollucite aggregates found in rare-element granitic pegmatites, a late-stage mineral formed after pollucite.

Association: Pollucite, lepidolite, muscovite, albite, quartz, K-Rb-feldspar, rubicline, spodumene, montebrasite, elbaite.

Distribution: At Mt. Vasin-Myl'k, Voron'f Tundras, Kola Peninsula, Russia [TL]. From the Red Cross Lake pegmatites, Manitoba, and the Eastern Moblan pegmatite, Frotet-Evans greenstone belt, Quebec, Canada.

Name: Honors Russian mineralogist A. V. *Voloshin* (b. 1937).

Type Material: A.E. Fersman Mineralogical Museum, RAS, Moscow, Russia.

References: (1) Pekov, I.V., N.N. Kononkova, A.A. Agakhanov, D.I. Belakovskiy, S.S. Kazantsev, and N.V. Zubkova (2009) Voloshinite, a new rubidium mica from granite pegmatites of Voron'f Tundras (Kola Peninsula) (English abstract). *Zap. Ross. Mineral. Obshch.*, 138(3), 90-100. (2) Grew, E.S., G. Hystad, M.P.C. Toapanta, A. Eleish, A. Ostroverkhova, J. Golden, and R.M. Hazen (2019) Lithium mineral evolution and ecology: comparison with boron and beryllium. *Eur. J. Mineral.*, 31(4), 755-774.