

Crystal Data: Monoclinic. *Point Group:* $2/m$. In crystals, to 15 cm; more commonly as subrounded to irregularly shaped grains and aggregates of such grains. *Twinning:* Twin plane {010}, uncommon.

Physical Properties: *Cleavage:* {010}, good; {h0l}, poor. *Fracture:* Uneven to conchoidal. Hardness = 6 VHN = 770 D(meas.) = 2.92–2.97 D(calc.) = [3.07] Altered portions fluoresce brownish yellow under SW UV.

Optical Properties: Transparent. *Color:* Colorless, pink, pale brown, silvery; in transmitted light, colorless. *Luster:* Greasy; highly vitreous to pearly on cleavage surfaces. *Optical Class:* Biaxial (-). *Dispersion:* $r > v$, distinct. $\alpha = 1.605(3)$ $\beta = 1.623(3)$ $\gamma = 1.625(3)$ $2V(\text{meas.}) = 40^\circ\text{--}56^\circ$

Cell Data: *Space Group:* $C2/c$. $a = 10.98(4)$ $b = 10.00(4)$ $c = 8.52(3)$ $\beta = 100^\circ 24'$ $Z = 4$

X-ray Powder Pattern: Kipawa River, Canada.

5.053 (100), 3.669 (75), 3.882 (45), 3.237 (40), 3.363 (35), 3.548 (25), 1.945 (20)

Chemistry:	(1)	(2)	(1)	(2)
SiO ₂	55.76	56.57	CaO	0.49
TiO ₂	trace		Na ₂ O	14.03
ZrO ₂	28.11	28.14	K ₂ O	0.68
Al ₂ O ₃	0.20		F	0.20
Fe ₂ O ₃	0.10		H ₂ O ⁺	0.32
Nb ₂ O ₅	0.33		H ₂ O ⁻	0.09
FeO	0.00		LOI	0.11
MnO	trace		-O = F ₂	0.08
MgO	0.06	0.23	Total	100.29
				99.99

(1) Mt. Vavnbed, Russia; ZrO₂ includes HfO₂ 1.7%; corresponds to (Na, K, Ca)_{2.00}Zr_{0.96}Si_{3.91}O₁₁.

(2) Ascension Island; corresponds to (Na, K, Ca)_{2.02}Zr_{0.97}Si_{4.01}O₁₁.

Polymorphism & Series: May invert to triclinic symmetry below 29 °C.

Occurrence: A late phase in nepheline syenites, syenitic pegmatites, and along the contact zone of a differentiated alkalic massif (Lovozero massif, Russia); in miarolitic cavities in ejected blocks of peralkalic granite (Ascension Island).

Association: Eudialyte, microcline, albite, lorenzenite, arfvedsonite, magnesio-katophorite, aegirine, aenigmatite, fayalite, pyrochlore, apatite, fluorite.

Distribution: In Russia, from near Mt. Vavnbed, Lovozero massif, Kola Peninsula; and in the Burpala massif, about 120 km north of Lake Baikal, eastern Siberia. Large crystals from the [Sheffield Lake complex,] Kipawa River, Villedieu Township, Quebec, Canada. On Green Mountain, Ascension Island, southern Atlantic Ocean.

Name: In honor of the Russian mineralogist and geochemist Kuz'ma Alekseevich Vlasov (1905–1964), founder of the Institute of Mineralogy, Geochemistry, and Crystal Chemistry of Rare Elements, Moscow, Russia.

Type Material: Mining Institute, St. Petersburg, 1037/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 83207, vis5052; National School of Mines, Paris, France.

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