

Crystal Data: Hexagonal. *Point Group:* 6/m 2/m 2/m. As fine-grained aggregates to 20 μm in massive polyminerale pseudomorphs after delhayelite crystals.

Physical Properties: *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle. *Hardness* = ~ 3 D(meas.) = 2.25(1) [With inclusions.] D(calc.) = 2.196

Optical Properties: Transparent to translucent. *Color:* Colorless, white or gray. *Streak:* White. *Luster:* Vitreous to greasy.

Optical Class: Uniaxial (-). $\omega = 1.543(2)$ $\varepsilon = 1.476(2)$ *Pleochroism:* None; distinct pseudoabsorption from colorless to grayish due to large birefringence (0.067).

Cell Data: Space Group: $P6_3/mcm$. $a = 9.2691(2)$ $c = 15.8419(4)$ $Z = 2$

X-ray Powder Pattern: Koashva pit (Vostochnyi mine), Mt. Koashva, Kola peninsula, Russia. 3.011 (100), 2.626 (42), 2.676 (36), 3.486 (35), 2.977 (32), 7.96 (27), 2.206 (26)

Chemistry:	(1)	(2)
Na ₂ O	4.09	3.97
K ₂ O	35.72	36.16
CaO	14.92	14.35
MnO	0.01	
FeO	0.02	
SO ₃	0.11	
Cl	4.32	4.54
CO ₂	[28.28]	28.16
H ₂ O	[13.90]	13.84
<u>-O = Cl</u>	<u>0.98</u>	<u>1.02</u>
Total	100.39	100.00

(1) Koashva pit (Vostochnyi mine), Mt. Koashva, Kola peninsula, Russia; average of 17 electron microprobe analyses supplemented by FTIR spectroscopy, H₂O and CO₂ calculated from structure; corresponds to $K_{5.90}Ca_{2.07}Na_{1.03}(CO_3)_5(SO_4)_{0.01}O_{0.05}Cl_{0.95} \cdot 6H_2O$. (2) $K_6(Ca_2Na)(CO_3)_5Cl \cdot 6H_2O$.

Occurrence: In peralkaline pegmatite in an alkaline igneous complex.

Association: Villiamite, natrite, potassic feldspar, pectolite, sodalite, biotite, lamprophyllite, titanite, fluorapatite, wadeite, burbankite, rasvumite, djerfisherite, molybdenite.

Distribution: From the south part of the Koashva open pit (Vostochnyi mine), Mt. Koashva, Khibiny alkaline complex, Kola peninsula, Russia.

Name: Honors Russian mineralogist Alexander Petrovich Khomyakov (1933-2012), a specialist in the mineralogy of alkaline rocks, of the Khibiny and Lovozero alkaline complexes, and a senior author for the descriptions of 73 new minerals discovered there.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (95005).

References: (1) Pekov, I.V., N.V. Zubkova, V.O. Yapaskurt, I.S. Lykova, N.V. Chukanov, D.I. Belakovskiy, S.N. Britvin, A.G. Turchkova, and D.Yu. Pushcharovky (2019) Alexkhomyakovite, $K_6(Ca_2Na)(CO_3)_5Cl \cdot 6H_2O$, a new mineral from the Khibiny alkaline complex, Kola peninsula, Russia. *Eur. J. Mineral.*, 31(1), 135-143. (2) (2020) *Amer. Mineral.*, 105(7), 1108 (abs. ref. 1).