

**Crystal Data:** Hexagonal. *Point Group:* 6/m 2/m 2/m. As fine-grained aggregates to 20  $\mu\text{m}$  in massive polymineralic pseudomorphs after delhayelite crystals.

**Physical Properties:** *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle. *Hardness* =  $\sim 3$  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 <sub>2</sub> O	4.09	3.97
K <sub>2</sub> O	35.72	36.16
CaO	14.92	14.35
MnO	0.01	
FeO	0.02	
SO <sub>3</sub>	0.11	
Cl	4.32	4.54
CO <sub>2</sub>	[28.28]	28.16
H <sub>2</sub> O	[13.90]	13.84
-O = Cl	0.98	1.02
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, H<sub>2</sub>O and CO<sub>2</sub> 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).