

# Hydrodelhayelite

# KCa<sub>2</sub>AlSi<sub>7</sub>O<sub>17</sub>(OH)<sub>2</sub>•6H<sub>2</sub>O

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**Crystal Data:** Orthorhombic. *Point Group:* *mm*2. Habit not stated.

**Physical Properties:** *Cleavage:* {010}, very perfect; {100} and {001}, imperfect. Hardness = ~4 D(meas.) = 2.168 D(calc.) = 2.22

**Optical Properties:** Semitransparent. *Color:* Grayish white. *Luster:* Vitreous. *Optical Class:* Biaxial.  $\alpha = 1.503$   $\beta = \text{n.d.}$   $\gamma = 1.518$   $2V(\text{meas.}) = \text{n.d.}$

**Cell Data:** *Space Group:* *Pnm*2<sub>1</sub>.  $a = 6.6483$   $b = 23.8462$   $c = 7.0727$   $Z = 2$

**X-ray Powder Pattern:** Khibiny massif, Russia. 2.923 (100), 3.069 (75), 2.800 (55), 3.319 (43), 6.79 (38)

Chemistry:	(1)	(2)	(1)	(2)	
SiO <sub>2</sub>	55.53	55.56	Na <sub>2</sub> O	0.22	
TiO <sub>2</sub>	0.01		K <sub>2</sub> O	6.18	6.22
Al <sub>2</sub> O <sub>3</sub>	8.46	6.74	F	0.00	
Fe <sub>2</sub> O <sub>3</sub>	0.65		Cl	0.15	
MnO	0.18		H <sub>2</sub> O <sup>+</sup>	9.62	
MgO	0.21		H <sub>2</sub> O <sup>-</sup>	5.58	
CaO	12.72	14.82	H <sub>2</sub> O		16.66
SrO	0.22		-O = Cl <sub>2</sub>	0.09	
			Total	99.64	100.00

(1) Mt. Rasvumchorr, Khibiny massif, Russia. (2) KCa<sub>2</sub>AlSi<sub>7</sub>O<sub>17</sub>(OH)<sub>2</sub>•6H<sub>2</sub>O.

**Occurrence:** A secondary alteration product of delhayelite from ijolite-urtite pegmatites in a differentiated alkalic massif.

**Association:** Delhayelite, lamprophyllite, eudialyte, hisingerite, aegirine, orthoclase.

**Distribution:** On Mts. Rasvumchorr and Yukspor, in the Khibiny massif, Kola Peninsula, Russia.

**Name:** For its relation to *delhayelite*, and the water in its composition.

**Type Material:** Mining Institute, St. Petersburg, 1178/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 79785.

**References:** (1) Dorfman, M.D. and M.I. Chiragov (1979) Hydrodelhayelite, a product of supergene alteration of delhayelite. *New data on minerals of the USSR*, 28, 172–175. (2) (1980) *Mineral. Mag.*, 31, 496 (abs. ref. 1). (3) (1987) *Amer. Mineral.*, 72, 1024 (abs. ref. 1). (4) Chiragov, M.I. and M.G. Dorfman (1981) Crystal chemistry of minerals in the delhayelite group. *Doklady Acad. Nauk SSSR*, 260, 458–461 (in Russian).