

Crystal Data: Hexagonal. *Point Group:* $\bar{3} 2/m$. As crystals, to 3 cm.

Physical Properties: *Cleavage:* Perfect on {0001}. *Hardness* = ~5 *D*(meas.) = 3.13
D(calc.) = 3.19

Optical Properties: Transparent. *Color:* Colorless. *Luster:* Vitreous, pearly on the perfect cleavage.

Optical Class: Uniaxial (-), may be anomalously biaxial. $\omega = 1.578(2)$ $\epsilon = 1.577(2)$

Cell Data: *Space Group:* $R\bar{3}m$. $a = 7.094$ $c = 41.320$ $Z = 1$

X-ray Powder Pattern: Vuonnemiok River, Kola Peninsula, Russia.
2.746 (100), 3.43 (32), 13.80 (25), 3.06 (25), 2.804 (25), 3.54 (21), 2.719 (21)

Chemistry:	(1)	(2)
P ₂ O ₅	33.83	36.72
SiO ₂	3.60	
ZrO ₂	3.25	
Fe ₂ O ₃	0.20	
CaO	31.80	33.85
BaO	12.00	13.22
Na ₂ O	9.72	13.36
K ₂ O	1.64	
F	5.25	4.92
H ₂ O	0.50	
-O = F ₂	2.20	2.07
S	0.22	
Total	99.81	100.00

(1) Vuonnemiok River, Kola Peninsula, Russia; K, Fe, Zr, S, Si, and some F attributed to impurities. (2) Na₅Ca₇Ba(PO₄)₆F₃.

Occurrence: A late-stage pneumatolytic mineral in pegmatitic veinlets in a differentiated alkalic massif.

Association: Natrosilite, vuonnemite, lomonosovite, zirsinalite, natisite, rasvumite, villiaumite, aegirine, thenardite, umbite, paraumbite, kostylevite, wadeite.

Distribution: In the valley of the Vuonnemiok River, [on Mt. Koashva,] Khibiny massif, Kola Peninsula, Russia.

Name: For the locality in the Arctic region.

Type Material: Mining Institute, St. Petersburg, 120/1; Geology Museum, Kola Branch, Academy of Sciences, Apatity, 5708/2; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 82132; The Natural History Museum, London, England, 1994,2.

References: (1) Khomyakov, A.P., A.V. Bykova, and T.A. Kurova (1981) Arctite, Na₂Ca₄(PO₄)₃F, a new mineral. *Zap. Vses. Mineral. Obshch.*, 110, 506–508 (in Russian). (2) (1982) *Amer. Mineral.*, 67, 621 (abs. ref. 1). (3) (1982) *Mineral. Abs.*, 33, 168 (abs. ref. 1). (4) Sokolova, E.V., N.A. Yamnova, Y.K. Yegorov-Tismenko, and A.P. Khomyakov (1984) Crystal structure of a new phosphate of Na, Ca, and Ba (Na₅Ca)Ca₆Ba[PO₄]₆F₃, *Doklady Acad. Nauk SSSR*, 274, 78–83 (in Russian). (5) Khomyakov, A.P. (1995) *Mineralogy of hyperagpaitic alkaline rocks*. Clarendon Press, Oxford, 165.