

Crystal Data: Hexagonal. *Point Group:* 6/m. As hexagonal, prismatic to acicular crystals to 2 mm, in sheaf-like clusters to 2 mm embedded in natrolite.

Physical Properties: *Cleavage:* None. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness = 5
D(meas.) = n.d. D(calc.) = 3.915 Cream-colored fluorescence under SW UV.

Optical Properties: Transparent. *Color:* Colorless with a pale greenish tint. *Streak:* White.
Luster: Vitreous.
Optical Class: Uniaxial (-). $\omega = 1.630(1)$ $\varepsilon = 1.623(1)$

Cell Data: *Space Group:* P6₃/m. $a = 9.845(7)$ $c = 7.383(4)$ $Z = 2$

X-ray Powder Pattern: Belovitovoye pegmatite, Kirovskii mine, Mt. Kukisvumchorr, Russia.
2.940 (100), 2.009 (50), 1.955 (45), 3.21 (40), 2.823 (35), 3.71 (30), 1.500 (30)

Chemistry:	(1)	(2)
Na ₂ O	0.10	
CaO	2.49	
SrO	62.72	69.83
BaO	2.40	
La ₂ O ₃	0.34	
Ce ₂ O ₃	0.22	
ThO ₂	0.28	
P ₂ O ₅	29.02	28.69
F	1.45	2.56
H ₂ O	[0.54]	
-O = F ₂	0.61	1.08
Total	98.95	100.00

(1) Belovitovoye pegmatite, Kirovskii mine, Mt. Kukisvumchorr, Russia; average electron microprobe analysis, H₂O calculated, F by ion-selective method; corresponds to (Sr_{4.46}Ca_{0.33}Ba_{0.12}Na_{0.02}La_{0.02}Ce_{0.01}Th_{0.01})_{Σ=4.97}P_{3.01}O₁₂[F_{0.56}(OH)_{0.44}]_{Σ=1}. (2) Sr₅(PO₄)₃F.

Mineral Group: Apatite supergroup, apatite group.

Occurrence: From hydrothermal alteration of peralkaline pegmatite is a sinuous and branched vein cross-cutting inequigranular nepheline syenite in an alkaline massif.

Association: Natrolite, microcline, aegirine, pectolite, lamprophyllite, belovite-(Ce), belovite-(La), gaidonnayite, nenadkevichite, komarovite, manganokukisvumite, epididymite, sphalerite, neotocite.

Distribution: From the Belovitovoye peralkaline pegmatite, Kirovskii apatite mine, Mt. Kukisvumchorr, Khibiny alkaline complex, Kola peninsula, Russia [TL]. Similar material at Mt. Alluaiv, Lovozero complex, Kola peninsula, Russia, as rims on fluorapatite.

Name: After the chemical element *strontium* and *adelphos*, Greek for “brother”, as the full strontium analogue of fluorapatite, the most widespread member of the apatite supergroup.

Type Material: A.E. Fersman Mineralogical Museum, RAS, Moscow, Russia (3693/1.).

References: (1) Pekov, I.V., S.N. Britvin, N.V. Zubkova, D.Yu. Pushcharovsky, M. Pasero, and S. Merlino (2010) Stronadelphite, Sr₅(PO₄)₃F, a new apatite-group mineral. *Eur. J. Mineral.*, 22, 869-874. (2) Xue, W., K. Zhai, C-C. Lin, and S. Zhai (2018) Raman spectroscopic study of stronadelphite Sr₅(PO₄)₃F at various temperatures. *Vibrational Spectroscopy* 98, 123-127. (3) Pasero, M., A.R. Kampf, C. Ferraris, I.V. Pekov, J. Rakovan, and T.J. White (2010) Nomenclature of the apatite supergroup minerals. *Eur. J. Mineral.*, 22, 163-179.