Strontiowhitlockite $Sr_9Mg(PO_4)_6(PO_3OH)$

Crystal Data: Hexagonal. *Point Group:* 3*m*. Pipelike tubes, to 3 mm, of radial fibers, and rosettes of rounded tabular crystals, flattened on {0001}; fine granular.

Physical Properties: *Cleavage:* On {0001}, fair, may be a parting. Hardness = n.d. D(meas.) = 3.64(2) D(calc.) = 3.60

Optical Properties: Semitransparent. *Color:* White, pale gray, pale brown; colorless in transmitted light. *Streak:* White. *Luster:* Dull.
Optical Class: Uniaxial (–). *Orientation:* $X = c$; parallel extinction. $\omega = 1.601(2)$ $\epsilon = 1.598(2)$

Cell Data: *Space Group:* [*R*3*c*] (by analogy to whitlockite). $a = 10.644(9)$ $c = 39.54(6)$ Z = 6

X-ray Powder Pattern: Kovdor massif, Kola Peninsula, Russia.
3.004 (100), 2.661 (80), 3.288 (37), 1.783 (36), 3.071 (29), 1.940 (29), 2.246 (26)

Chemistry:

	(1)	(2)
P_2O_5	35.2	33.60
FeO	0.2	
MnO	0.2	
MgO	4.6	2.73
CaO	5.5	
SrO	51.4	63.06
BaO	2.3	
Na_2O	0.0	
H_2O	0.5	0.61
Total	99.9	100.00

(1) Kovdor massif, Kola Peninsula, Russia; by electron microprobe, H_2O by microcoulometric methods, PO_3OH confirmed by IR; corresponds to $(Sr_{6.96}Ca_{1.38}Mg_{0.60}Ba_{0.21}Mn_{0.04}Fe_{0.04})_{\Sigma=9.23}$ $Mg_{1.00}(PO_4)_6(P_{0.96}O_3OH_{0.78})$. (2) $Sr_9Mg(PO_4)_6(PO_3OH)$.

Occurrence: Very rare, in cavities in a dolomite carbonatite vein cutting pyroxenites in an alkalic massif.

Association: Strontian collinsite, bobierrite, carbonate-fluorapatite, rimkorolgite, pyrite, dolomite, unnamed Sr–Mg phosphate.

Distribution: From the Zheleznyi iron ore deposit, Kovdor alkalic massif, Kola Peninsula, Russia.

Name: As the *strontium* analog of *whitlockite*.

Type Material: Mining Institute, St. Petersburg, 2022/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, r558.

References: (1) Britvin, S.N., Y.A. Pakhomovskii, A.N. Bogdanova, and V.I. Skiba (1991) Strontiowhitlockite, $Sr_9Mg(PO_3OH)(PO_4)_6$, a new mineral from the Kovdor deposit, Kola Peninsula, U.S.S.R. Can. Mineral., 29, 87–93. (2) (1991) Amer. Mineral., 76, 2024 (abs. ref. 1).