

Fluorvesuvianite**Ca₁₉(Al, Mg)₁₃(SiO₄)₁₀(Si₂O₇)₄O(F, OH)₉**

Crystal Data: Tetragonal. *Point Group:* 4/m 2/m 2/m. As radiating aggregates of acicular prisms to 1.5 cm displaying probably {100} and {110}.

Physical Properties: *Cleavage:* None. *Tenacity:* Brittle. *Fracture:* n.d. *Hardness* = 6
D(meas.) = 3.46(3) D(calc.) = 3.40 Nonfluorescent.

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous silky.
Optical Class: Uniaxial (-). $\omega = 1.702(1)$ $\varepsilon = 1.699(1)$ *Pleochroism:* None.

Cell Data: *Space Group:* P4/nnc. $a = 15.5295(10)$ $c = 11.7808(11)$ $Z = 2$

X-ray Powder Pattern: Lupikko mine, Pitkäranta ore field, Karelia, Russia.
2.453 (100), 2.743 (90), 2.589 (50), 2.945 (35), 3.465 (30), 3.040 (30), 1.619 (30)

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|--------------------------------|-------|
| Chemistry: | (1) |
| SiO ₂ | 36.6 |
| Al ₂ O ₃ | 17.9 |
| MgO | 1.9 |
| FeO | 2.8 |
| MnO | 0.1 |
| CaO | 36.1 |
| F | 4.6 |
| H ₂ O | 0.5 |
| -O = F ₂ | 1.94 |
| Total | 98.56 |

(1) Lupikko mine, Pitkäranta ore field, Karelia, Russia; average electron microprobe analysis supplemented by IR spectroscopy, F by ion-selective electrode, H₂O by TGA; corresponds to Ca_{19.03}(Al_{10.38}Mg_{1.39}Fe²⁺_{1.15}Mn_{0.04})_{Σ=12.96}Si_{18.01}O₆₈[F_{7.16}(OH)_{1.64}O_{0.60}]_{Σ=9.60}.

Mineral Group: Vesuvianite group.

Occurrence: In coarse grained, chloritized diopside skarn.

Association: Vesuvianite, clinocllore, sphalerite, calcite.

Distribution: At the Lupikko mine, Pitkäranta ore field, on the northeastern coast of Ladoga Lake, Karelia, Russia.

Name: The prefix *fluor* indicates the F-dominant analog of *vesuvianite*.

Type Material: Mineralogical Museum, Department of Mineralogy, Saint Petersburg State University, Russia (1/18619).

References: (1) Britvin, S.N., A.A. Antonov, S.V. Krivovichev, T. Armbruster, P.C. Burns, and N.V. Chukanov (2003) Fluorvesuvianite, Ca₁₉(Al, Mg, Fe²⁺)₁₃[SiO₄]₁₀[Si₂O₇]₄O(F, OH)₉, a new mineral species from Pitkäranta, Karelia, Russia: description and crystal structure. *Can. Mineral.*, 41, 1371-1380. (2) (2004) *Amer. Mineral.*, 89, 1575 (abs. ref. 1).