Fluorvesuvianite  

**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 (-).  
*ω = 1.702(1)*  
*ε = 1.699(1)*  
*Pleochroism:* None.  

**Cell Data:**  
*Space Group:* P4/nmc.  
*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)  

**Chemistry:**  

<table>
<thead>
<tr>
<th>Component</th>
<th>Formula</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiO₂</td>
<td></td>
<td>36.6</td>
</tr>
<tr>
<td>Al₂O₃</td>
<td></td>
<td>17.9</td>
</tr>
<tr>
<td>MgO</td>
<td></td>
<td>1.9</td>
</tr>
<tr>
<td>FeO</td>
<td></td>
<td>2.8</td>
</tr>
<tr>
<td>MnO</td>
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<td>0.1</td>
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<tr>
<td>CaO</td>
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<td>36.1</td>
</tr>
<tr>
<td>F</td>
<td></td>
<td>4.6</td>
</tr>
<tr>
<td>H₂O</td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>O=F₂</td>
<td></td>
<td>1.94</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>98.56</td>
</tr>
</tbody>
</table>

(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 Ca₁₉.₀₃(Al₁₀.₃₈Mg₁.₃₉Fe²⁺₁.₁₅Mn₀.₀₄)₂₋₁₂.₉₆Si₁₈.₀₁O₆₈[F₇.₁₆(OH)₁.₆₄O₆.₆₆]Z=2₋₉.₆₀.  

**Mineral Group:**  
Vesuvianite group.  

**Occurrence:** In coarse grained, chloritized diopside skarn.  

**Association:** Vesuvianite, clinochlore, 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:**  