**Ferrotapiolite** 

\[(\text{Fe}^{2+}, \text{Mn}^{2+})(\text{Ta, Nb})_2\text{O}_6\]

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**Crystal Data:** Tetragonal. *Point Group:* 4/m2/m2/m. Crystals usually well developed, short prismatic or equant, with several forms. *Twinning:* Common on {013}, then distorted along [031]; rarely on {101}.

**Physical Properties:** *Fracture:* Uneven to subconchoidal. Hardness = n.d. VHN = 885–974 (100 g load). D(meas.) = 7.90(5) D(calc.) = 8.17–8.21

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**Optical Class:** Uniaxial (+). *Pleochroism:* Strong; \(O = \) pale yellowish or reddish brown. \(\omega = 2.27(1) \quad \epsilon = 2.42(1)\)

**Cell Data:** *Space Group:* P4/mnm. 

**X-ray Powder Pattern:** Synthetic FeTa\(_2\)O\(_6\). (ICDD 23–1124).

**Chemistry:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Formula (mol)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nb(_2)O(_5)</td>
<td>1.32</td>
<td>1.32</td>
</tr>
<tr>
<td>Ta(_2)O(_5)</td>
<td>85.21</td>
<td>85.21</td>
</tr>
<tr>
<td>TiO(_2)</td>
<td>0.46</td>
<td>0.46</td>
</tr>
<tr>
<td>SnO(_2)</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>FeO</td>
<td>9.67</td>
<td>9.67</td>
</tr>
<tr>
<td>MnO</td>
<td>4.17</td>
<td>4.17</td>
</tr>
</tbody>
</table>

Total 100.85

(1) Skogbøle, Finland; by electron microprobe, total Fe as FeO, total Mn as MnO; corresponds to \((\text{Fe}_{0.68}\text{Mn}_{0.30})\_\Sigma=0.98(\text{Ta}_{1.94}\text{Nb}_{0.05}\text{Ti}_{0.02})\_\Sigma=2.01\text{O}_6\).

**Polymorphism & Series:** Forms a series with manganotapiolite.

**Mineral Group:** Ferrotapiolite group.

**Occurrence:** An accessory mineral in zoned granite pegmatites; detrital in placers.

**Association:** Albite, muscovite, tourmaline, beryl, spodumene, columbite–tantalite, wodginite, cassiterite, triplite, triphylite.

**Distribution:** Well-characterized material from: in Finland, in the Eräjärvi area, Orivesi; at Sukula and Härkäsaari, Tammela; at Skogbøle and the Rosendal pegmatite, Kemiö (Kimito) Island. From Marsíkov, Czech Republic. At Olgiasca, Lombardy, Italy. In France, from Chanteloube, Haute-Vienne. Occurs at Angarf-Nord and elsewhere in the Anti-Atlas Mountains, Morocco. From Greenbushes, Strelley, and Tabba Tabba, Pillbara, Western Australia. In the USA, from Topsham, Sagadahoc Co. and Paris, Oxford Co., Maine; in the Old Mike mine, six km north-northwest of Custer, Custer Co., South Dakota; at Rockford, Coosa Co., Alabama.

**Name:** For its dominant FERROus iron content and for Tapio, ancient Finnish god of the forest, as the mineral was first found in Finland.

**References:** 

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