

# Ferrowodginite

# Fe<sup>2+</sup>Sn<sup>4+</sup>Ta<sub>2</sub>O<sub>8</sub>

©2001-2005 Mineral Data Publishing, version 1

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As lathlike to irregular inclusions, to 0.3 mm, in tantalian cassiterite. *Twinning:* Polysynthetic on {100}.

**Physical Properties:** *Fracture:* Irregular. *Tenacity:* Brittle. Hardness = 5.5  
D(meas.) = n.d. D(calc.) = 7.02

**Optical Properties:** Transparent to translucent. *Color:* Dark brown to black. *Streak:* Dark brown. *Luster:* Vitreous.

*Optical Class:* Biaxial.  $\alpha = > 2.0$   $\beta = > 2.0$   $\gamma = > 2.0$  2V(meas.) = n.d.

*Anisotropism:* Noted.

**Cell Data:** *Space Group:* C2/c.  $a = 9.415(7)$   $b = 11.442(6)$   $c = 5.103(4)$   $\beta = 90.8(1)^\circ$   
Z = 4

**X-ray Powder Pattern:** Near Sukula, Finland.  
2.97 (100), 4.16 (50), 2.493 (40), 2.55 (30), 1.455 (30), 3.64 (20), 2.86 (20)

Chemistry:	(1)	(2)
Nb <sub>2</sub> O <sub>5</sub>	14.8	
TiO <sub>2</sub>	4.3	
SnO <sub>2</sub>	10.1	22.68
Fe <sub>2</sub> O <sub>3</sub>	1.9	
Ta <sub>2</sub> O <sub>5</sub>	56.3	66.51
FeO	9.3	10.81
MnO	2.8	
Total	[99.5]	100.00

(1) Near Sukula, Finland; by electron microprobe, average of two analyses, original total given as 99.4%; Fe<sup>2+</sup>:Fe<sup>3+</sup> calculated from stoichiometry; corresponds to (Fe<sub>0.76</sub><sup>2+</sup>Mn<sub>0.23</sub>)<sub>Σ=0.99</sub>(Sn<sub>0.40</sub>Ti<sub>0.32</sub>Ta<sub>0.15</sub>Fe<sub>0.14</sub><sup>3+</sup>)<sub>Σ=1.01</sub>(Ta<sub>1.34</sub>Nb<sub>0.66</sub>)<sub>Σ=2.00</sub>O<sub>8</sub>. (2) FeSnTa<sub>2</sub>O<sub>8</sub>.

**Mineral Group:** Wodginite group: Fe<sup>2+</sup> > 0.5; Ti<sub>B</sub> ≤ 0.5; Fe<sub>B</sub><sup>3+</sup> ≤ 0.25.

**Occurrence:** In museum specimens from a granite pegmatite.

**Association:** Tantalian cassiterite, tapiolite, bismuth, stannomicrolite.

**Distribution:** Near Sukula, Tammela, Finland, the exact locality now lost.

**Name:** For its content of FERROus iron and its relation to *wodginite*.

**Type Material:** R.B Ferguson Museum of Mineralogy, University of Manitoba, Winnipeg, Canada.

**References:** (1) Ercit, T.S., P. Černý, and F.C. Hawthorne (1992) The wodginite group. III. Classification and new species. *Can. Mineral.*, 30, 633–638. (2) (1993) *Amer. Mineral.*, 78, 848 (abs. ref. 1).