

Ferrowodginite

Fe²⁺Sn⁴⁺Ta₂O₈

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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 ₂ O ₅	14.8	
TiO ₂	4.3	
SnO ₂	10.1	22.68
Fe ₂ O ₃	1.9	
Ta ₂ O ₅	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%; Fe²⁺:Fe³⁺ calculated from stoichiometry; corresponds to (Fe_{0.76}²⁺Mn_{0.23})_{Σ=0.99}(Sn_{0.40}Ti_{0.32}Ta_{0.15}Fe_{0.14}³⁺)_{Σ=1.01}(Ta_{1.34}Nb_{0.66})_{Σ=2.00}O₈. (2) FeSnTa₂O₈.

Mineral Group: Wodginite group: Fe²⁺ > 0.5; Ti_B ≤ 0.5; Fe_B³⁺ ≤ 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).