

**Tantalowodginite****(Mn<sub>0.5</sub>□<sub>0.5</sub>)TaTa<sub>2</sub>O<sub>8</sub>**

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As anhedral masses to 12 cm, as crystals to 1 cm.

**Physical Properties:** *Cleavage:* Distinct on {100}. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 5.5 D(meas.) = 7.61 D(calc.) = 7.87

**Optical Properties:** Semi-transparent. *Color:* Orange-red to deep red. *Streak:* Yellowish tan. *Luster:* Vitreous to sub-adamantine.

*Optical Class:* Biaxial (+).  $n(\text{calc.}) = 2.24$   $2V \approx 70^\circ$  *Orientation:*  $Z \wedge c = 5-12^\circ$ .

*Pleochroism:* Weak to moderate, orangish yellow || cleavage to greenish yellow ⊥ to cleavage.

*Birefringence:* Strong to extreme. *Dispersion:* Strong, with anomalous sky-blue interference colors close to the extinction point.

**Cell Data:** Space Group: C2/c.  $a = 9.542(1)$   $b = 11.488(2)$   $c = 5.128(1)$   $\beta = 91.13(1)^\circ$   $Z = 4$

**X-ray Powder Pattern:** Emmons pegmatite, Uncle Tom Mountain, Oxford Co., Maine, USA. 3.667 (100), 3.000 (100), 2.957 (100), 3.838 (30), 2.883 (30), 1.778 (30), 7.332 (20)

<b>Chemistry:</b>	(1)	(2)
Li <sub>2</sub> O	0.54	
MnO	6.23	5.08
FeO	0.23	
TiO <sub>2</sub>	0.01	
SnO <sub>2</sub>	8.14	
Nb <sub>2</sub> O <sub>5</sub>	3.97	
Ta <sub>2</sub> O <sub>5</sub>	80.75	94.92
Total	99.88	100.00

(1) Emmons pegmatite, Uncle Tom Mountain, Oxford Co., Maine, USA; average of 6 electron microprobe analyses, Li<sub>2</sub>O by direct-current plasma spectrometry; corresponds to <sup>A</sup>(Mn<sub>0.58</sub>Li<sub>0.24</sub>Fe<sub>0.02</sub>□<sub>0.16</sub>)<sub>Σ=1.00</sub><sup>B</sup>(Ta<sub>0.62</sub>Sn<sub>0.36</sub>Ti<sub>0.01</sub>)<sub>Σ=0.98</sub><sup>C</sup>(Ta<sub>1.83</sub>Nb<sub>0.17</sub>)<sub>Σ=2.00</sub>O<sub>8</sub>. (2) (Mn<sub>0.5</sub>□<sub>0.5</sub>)TaTa<sub>2</sub>O<sub>8</sub>.

**Mineral Group:** Wodginite group.

**Occurrence:** In the quartz-K-feldspar core of a complexly zoned pegmatite dike intruded into high-grade metasedimentary migmatites.

**Association:** Tantalite-(Mn), wodginite, columbite-(Mn), muscovite, fluorapatite, quartz, K-feldspar.

**Distribution:** At the Emmons pegmatite, Uncle Tom Mountain, near Greenwood, Oxford Co., Maine, USA.

**Name:** For dominant *tantalum* in the B-site in a member of the *wodginite* group.

**Type Material:** Maine Mineral and Gem Museum, Bethel, Maine, USA (MMGM-MP<sup>2</sup>-12-10-2016).

**References:** (1) Hanson, S.L., A.U. Falster, W.B. Simmons, R. Sprague, P. Vignola, N. Rotiroti, S. Andó, and F. Hatert (2018) Tantalowodginite, (Mn<sub>0.5</sub>□<sub>0.5</sub>)TaTa<sub>2</sub>O<sub>8</sub>, a new mineral species from the Emmons pegmatite, Uncle Tom Mountain, Maine, U.S.A. *Can. Mineral.*, 56(4), 543-553. (2) (2020) *Amer. Mineral.*, 105, 1117 (abs. ref. 1).