Tantalite-(Mn)

Mn<sup>2+</sup>Ta<sub>2</sub>O<sub>6</sub>

**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. [Crystals short prismatic or equant, also tabular; in groups of parallel or subparallel crystals; massive] (by analogy to columbite-(Fe)).

**Twinning:** [On {021} and {023}, may produce pseudohexagonal trillings.]

**Physical Properties:** *Cleavage:* [{100}, distinct; {010}, less distinct. *Fracture:* [Subconchoidal to uneven.] *Tenacity:* [Brittle.] *Hardness = [6] VHN = 488-681 (100 g load). D(meas.) = 6.65-8.00 D(calc.) = 8.01

**Optical Properties:** Opaque, transparent in thin edges. *Color:* Pink to nearly colorless, or reddish brown to black; colorless, reddish brown to red in transmitted light. *Streak:* Red, scarlet to black. *Luster:* Submetallic to vitreous.


**Cell Data:** *Space Group:* Pbcn (synthetic). *a = 14.440(2) b = 5.7661(8) c = 5.0930(9) Z = 4

**X-ray Powder Pattern:** Salinas, Brazil.

2.99 (10), 3.69 (9), 2.41 (7), 1.738 (7), 1.483 (7), 7.25 (5), 3.61 (5)

**Chemistry:**

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<tr>
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<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nb&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;</td>
<td>4.47</td>
<td>0.29</td>
<td>MnO</td>
</tr>
<tr>
<td>Ta&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;</td>
<td>79.81</td>
<td>85.8</td>
<td>86.17</td>
</tr>
<tr>
<td>SnO&lt;sub&gt;2&lt;/sub&gt; + WO&lt;sub&gt;3&lt;/sub&gt;</td>
<td>0.67</td>
<td>0.03</td>
<td>LOI</td>
</tr>
<tr>
<td>FeO</td>
<td>1.17</td>
<td>0.04</td>
<td>Total</td>
</tr>
</tbody>
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(1) Sanarka, Russia. (2) Morrua mine, Zambesia, Mozambique; by electron microprobe, corresponds to Mn<sub>1.00</sub>(Ta<sub>1.99</sub>Nb<sub>0.01</sub>)<sub>2-2.00</sub>O<sub>6</sub>. (3) MnTa<sub>2</sub>O<sub>6</sub>.

**Polymorphism & Series:** Dimorphous with tapiolite-(Mn); forms series, with columbite-(Mn), and with tantalite-(Fe) and tantalite-(Mg).

**Mineral Group:** Columbite group.

**Occurrence:** An accessory and primary constituent of granite pegmatites; detrital in placers.

**Association:** [Albite, microcline, beryl, lepidolite, muscovite, tourmaline, spodumene, lithiophilite, triphylite, amblygonite, triplite, samarskite, apatite, microlite, cassiterite.]

**Distribution:** Found on the Island of Utö, Sweden. At Glenbuchat, Aberdeenshire, Scotland. From Facciatoa, Elba, Italy. In the Zambesia, Tete, and Alto Ligonha districts, Mozambique. From Bikita, Zimbabwe. At the Steinkopf, Namaqualand, South Africa. In Brazil, from Salinas, Minas Gerais, and the Alto do Giz pegmatite, near Parellhas, Rio Grande do Norte. At Stak Nala, Gilgit district, Pakistan. From Wodgina, Greenhouses, and on Mt. Holland, Western Australia. In the USA, large crystals from Amelia, Amelia Co., Virginia; at Pala, San Diego Co., California. From the Tanco pegmatite, Bernic Lake, Manitoba, Canada. A few other less-well-defined localities are known.

**Name:** Suffix for dominant Mn in the composition and relation to tantalite-(Fe) and tantalite-(Mg), named for the Greek mythical Tantalus, for the difficulty in bringing the mineral into solution.