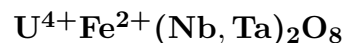


# Petscheckite



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**Crystal Data:** Hexagonal; metamict. *Point Group:*  $\bar{3}2/m$ . In elongated hexagonal crystals, to 4 cm.

**Physical Properties:** Hardness =  $\sim 5$  D(meas.) =  $\sim 7$  D(calc.) = 7.2 Radioactive.

**Optical Properties:** Opaque. *Color:* Black; white with orange tinge in reflected light, with red-brown internal reflections. *Streak:* Brownish black. *Luster:* Metallic.

*Optical Class:* Isotropic.

R:  $\sim 15$

**Cell Data:** *Space Group:*  $P\bar{3}1m$  for material heated to 650 °C.  $a = 6.42$   $c = 4.02$   $Z = 1$

**X-ray Powder Pattern:** Berere, Madagascar; after heating at 650 °C.

4.02 (10), 3.21 (10), 2.51 (8), 1.697 (4d), 1.850 (3), 2.01 (2), 1.861 (2)

## Chemistry:

	(1)
(Nb, Ta) <sub>2</sub> O <sub>5</sub>	45.99
UO <sub>2</sub>	40.5
ZrO <sub>2</sub>	0.42
Al <sub>2</sub> O <sub>3</sub>	0.71
Fe <sub>2</sub> O <sub>3</sub>	10.01
FeO	0.10
MnO	1.32
CaO	0.49
K <sub>2</sub> O	0.05
Total	99.59

(1) Berere, Madagascar; [“oxy-petscheckite” with Fe<sup>2+</sup> oxidized to Fe<sup>3+</sup>] corresponding to (U<sub>0.91</sub>Ca<sub>0.05</sub>Zr<sub>0.02</sub>K<sub>0.01</sub>)<sub>Σ=0.99</sub>(Fe<sub>0.64</sub><sup>3+</sup>Mn<sub>0.11</sub><sup>2+</sup>Al<sub>0.08</sub>Fe<sub>0.01</sub><sup>2+</sup>)<sub>Σ=0.84</sub>(Nb<sub>1.55</sub>Ta<sub>0.33</sub>Fe<sub>0.12</sub>)<sub>Σ=2.00</sub>O<sub>8</sub>.

**Occurrence:** An accessory mineral in a zoned pegmatite.

**Association:** Magnetite, columbite, liandratite, pyrochlore, strüverite, monazite, ilmenite, garnet, tourmaline, beryl, quartz, feldspar.

**Distribution:** From the Antsakoa I pegmatite, near Berere, about 40 km northeast of Tsaratanana, Madagascar.

**Name:** Honors Eckehard Petsch, of Idar-Oberstein, Germany, who prospected extensively in Madagascar.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 145619.

**References:** (1) Mücke, A. and H. Strunz (1978) Petscheckite and liandratite, two new pegmatite minerals from Madagascar. *Amer. Mineral.*, 63, 941–946.