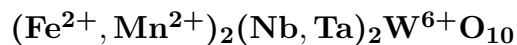


Qitianlingite



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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As crystals, thin tabular || {001}, to 0.2 mm.

Physical Properties: *Cleavage:* {100}, distinct. Hardness = n.d. VHN = 520–580 (50 g load). $D(\text{meas.}) = 6.30$ $D(\text{calc.}) = 6.423$ Moderately magnetic.

Optical Properties: Semitransparent. *Color:* Black; yellowish white in reflected light.

Streak: Dark brown. *Luster:* Semimetallic to metallic.

Optical Class: Biaxial. *Anisotropism:* Weak. *Birefractance:* Weak.

R_1 – R_2 : 12–14

Cell Data: *Space Group:* $Pbcn$. $a = 23.706(7)$ $b = 5.723(2)$ $c = 5.045(3)$ $Z = 4$

X-ray Powder Pattern: Qitianling, China.

2.96 (10), 1.773 (8), 3.65 (7), 2.52 (7), 2.87 (6), 1.385 (6), 1.194 (6)

Chemistry:

	(1)
WO_3	32.30
Nb_2O_5	34.06
Ta_2O_5	11.73
TiO_2	1.23
SnO_2	0.36
FeO	14.64
MnO	6.01
Total	100.33

(1) Qitianling, China; by electron microprobe, corresponding to $(\text{Fe}_{1.34}\text{Mn}_{0.56})_{\Sigma=1.90}(\text{Nb}_{1.69}\text{Ta}_{0.35}\text{Ti}_{0.10}\text{Sn}_{0.02})_{\Sigma=2.16}\text{W}_{0.92}\text{O}_{10}$.

Occurrence: In a pegmatite dike in granite.

Association: Quartz, potassic feldspar, albite, muscovite, zinnwaldite, cassiterite, wolframite, “wolframoixiolite”.

Distribution: From near Qitianling, Hunan Province, China.

Name: For Qitianling, China, near where the mineral was first collected.

Type Material: National Museum of Geology, Beijing, China.

References: (1) Yang Guangming, Wang Su, Peng Zhizhong, and Bu Jingzhen (1985) Qitianlingite – a newly discovered superstructure complex oxide. *Acta Mineral. Sinica*, 5(3), 193–198 (in Chinese with English abs.). (2) (1988) *Amer. Mineral.*, 73, 1497 (abs. ref. 1). (3) Peng Zhizhong, Wang Su, Ma Zhesheng, and Yang Guangming (1988) The crystal structure of qitianlingite ($\text{Fe}_2\text{Nb}_2\text{WO}_{10}$). *Kexue Tongbao*, 33(10), 856–861 (in English).