

**Ashanite****(Nb, Ta, U, Fe, Mn)<sub>4</sub>O<sub>8</sub>**

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**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . Single crystals are mentioned but the habit is not stated.

**Physical Properties:** *Fracture:* Conchoidal to subconchoidal. Hardness = 5.8–6.6  
VHN = 570–851 D(meas.) = 6.61(1) D(calc.) = 6.60

**Optical Properties:** Opaque, translucent on thin edges. *Color:* Dark brown to pitch-black; brownish red in thin section; pale bluish gray in reflected light. *Streak:* Brown. *Luster:* Semimetallic to pitchlike.

*Optical Class:* Biaxial (+). *Pleochroism:* Weak; X = pale brownish red; Z = dark brownish red. *Orientation:* X = b; Y = a; Z = c. *Absorption:* Z > X.  $\alpha = 2.31$   $\beta = 2.35$   $\gamma = 2.40$   
2V(meas.) = 70°–75°

R<sub>1</sub>–R<sub>2</sub>: (440) 12.1–12.1, (460) 11.4–11.5, (480) 11.2–11.3, (500) 11.0–11.0, (520) 11.0–11.0, (540) 10.9–10.9, (560) 10.9–10.8, (580) 10.8–10.8, (600) 10.8–10.7, (620) 10.7–10.7, (640) 10.7–10.6, (660) 10.6–10.6, (680) 10.6–10.6, (700) 10.6–10.6

**Cell Data:** *Space Group:* Pcan. a = 5.869 b = 4.873 c = 5.216 Z = 1

**X-ray Powder Pattern:** Altai Mountains, China.

2.95 (10), 3.65 (5), 2.54 (3), 2.51 (3), 2.38 (3), 1.729 (3), 2.874 (2)

**Chemistry:**

	(1)
U <sub>3</sub> O <sub>8</sub>	23.81
Nb <sub>2</sub> O <sub>5</sub>	36.76
Ta <sub>2</sub> O <sub>5</sub>	23.41
RE <sub>2</sub> O <sub>3</sub>	1.40
FeO	8.25
MnO	7.77
Total	101.40

(1) Altai Mountains, China; corresponds to (Nb<sub>1.61</sub>Fe<sub>0.66</sub>Mn<sub>0.63</sub>Ta<sub>0.61</sub>U<sub>0.51</sub>RE<sub>0.07</sub>)<sub>Σ=4.09</sub>O<sub>7.98</sub>.

**Occurrence:** In the central part of a pegmatite in albitized two-mica granite.

**Association:** Tantalum-rich columbite, thorium-rich monazite, ishikawaite.

**Distribution:** From an undefined locality in the Altai Mountains, Sinkiang Uighur Autonomous Province, northwestern China.

**Name:** From Altai and SHAN, Chinese for *mountains*, for the occurrence in the Altai Mountains, China.

**Type Material:** n.d.

**References:** (1) Zhang Rubo, Tian Huixin, Peng Zhizhong, Ma Zhesheng, Han Fengming, and Jing Zebei (1980) A new mineral – ashanite, (Nb, Ta, U, Fe, Mn)<sub>4</sub>O<sub>8</sub>. Kexue Tongbao, 25, 510–514 (in English). (2) (1981) Amer. Mineral., 66, 217 (abs. ref. 1).