

Ashanite

(Nb, Ta, U, Fe, Mn)₄O₈

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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:* $Z > X$. $\alpha = 2.31$ $\beta = 2.35$ $\gamma = 2.40$
 $2V(\text{meas.}) = 70^\circ\text{--}75^\circ$

$R_1\text{--}R_2$: (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 ₃ O ₈	23.81
Nb ₂ O ₅	36.76
Ta ₂ O ₅	23.41
RE ₂ O ₃	1.40
FeO	8.25
MnO	7.77
Total	101.40

(1) Altai Mountains, China; corresponds to $(\text{Nb}_{1.61}\text{Fe}_{0.66}\text{Mn}_{0.63}\text{Ta}_{0.61}\text{U}_{0.51}\text{RE}_{0.07})_{\Sigma=4.09}\text{O}_{7.98}$.

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, $(\text{Nb, Ta, U, Fe, Mn})_4\text{O}_8$. Kexue Tongbao, 25, 510–514 (in English). (2) (1981) Amer. Mineral., 66, 217 (abs. ref. 1).