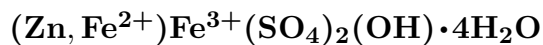


Chaidamuite



©2001-2005 Mineral Data Publishing, version 1

Crystal Data: Triclinic, pseudomonoclinic. *Point Group:* 1. As thick tabular to pseudocubic crystals, with {001}, {010}, {011}, and $\{\bar{1}01\}$; as grains or granular aggregates, to < 1 mm.

Physical Properties: *Cleavage:* On {001} and {100}, perfect. *Fracture:* Conchoidal. Hardness = 2.5–3 D(meas.) = 2.722(2) D(calc.) = 2.72

Optical Properties: Translucent. *Color:* Brown to yellow-brown. *Streak:* Pale yellow. *Luster:* Vitreous.

Optical Class: Biaxial (+). *Pleochroism:* Strong; X = pale yellow to colorless; Y = pale yellow; Z = brownish yellow. *Orientation:* X = b; Y \wedge a = 12°; Z \wedge c = 28°. *Dispersion:* r < v, strong. $\alpha = 1.632(1)$ $\beta = 1.640(1)$ $\gamma = 1.688(1)$ 2V(meas.) = 44(2)°

Cell Data: *Space Group:* P1. a = 7.309(2) b = 7.202(2) c = 9.691(3) $\alpha = 89.64(3)^\circ$ $\beta = 105.89(3)^\circ$ $\gamma = 91.11(2)^\circ$ Z = 2

X-ray Powder Pattern: Xitieshan mine, China.

3.118 (100), 3.090 (95), 9.40 (80), 5.00 (80), 3.64 (70), 5.03 (65), 2.048 (40)

Chemistry:	(1)	(2)
SO ₃	40.63	39.79
SiO ₂	0.15	
Al ₂ O ₃	0.12	
Fe ₂ O ₃	20.00	19.84
FeO	2.09	
MnO	0.06	
ZnO	17.00	20.22
Na ₂ O	0.02	
K ₂ O	0.01	
H ₂ O	19.21	20.15
Total	99.29	100.00

(1) Xitieshan mine, China; corresponds to $(\text{Zn}_{0.85}\text{Fe}_{0.12}^{2+})_{\Sigma=0.97}(\text{Fe}_{1.01}^{3+}\text{Al}_{0.01})_{\Sigma=1.02}(\text{SO}_4)_{2.05}(\text{OH})_{0.90} \cdot 3.87\text{H}_2\text{O}$. (2) $\text{ZnFe}(\text{SO}_4)_2(\text{OH}) \cdot 4\text{H}_2\text{O}$.

Occurrence: A secondary mineral in the oxidized portions of a Pb–Zn–Fe sulfide deposit.

Association: Coquimbite, copiapite, butlerite, zincobotryogen.

Distribution: From the Xitieshan Pb–Zn mine, south of Mt. Qilianshan, Chaidamu, Qinghai Province, China.

Name: For the occurrence near Chaidamu, China.

Type Material: Geology Department, Lanzhou University, Lanzhou; Geology and Mineral Resources Museum, Ministry of Geology, Beijing, China.

References: (1) Li Wanmao, Chen Guoying, and Peng Zhizhong (1986) Chaidamuite – a new zinc and ferric sulfate mineral. *Acta Mineral. Sinica*, 6, 109–113 (in Chinese with English abs.). (2) (1988) *Amer. Mineral.*, 73, 1493 (abs. ref. 1). (3) Li Wanmao and Wang Qiguang (1990) Determination and refinement of the crystal structure of chaidamuite. *Science in China, Series B*, 33, 623–630.