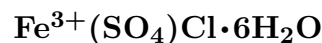


Xitieshanite



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Crystal Data: Monoclinic. *Point Group:* $2/m$. Rare in rhombic crystals, to 2 cm; massive.

Physical Properties: *Cleavage:* One, imperfect. *Fracture:* Uneven to conchoidal.
Hardness = 2.7 $D(\text{meas.}) = 1.98\text{--}1.99$ $D(\text{calc.}) = 1.997$ Soluble in H_2O .

Optical Properties: Translucent to nearly transparent. *Color:* Bright yellowish green; brownish red if superficially oxidized. *Streak:* Yellow. *Luster:* Vitreous.
Optical Class: Biaxial (+). *Pleochroism:* Strong; X = colorless to pale yellow; Y = pale yellow; Z = pale yellow with greenish tint. *Orientation:* Positive or negative elongation; parallel or inclined extinction. *Dispersion:* $r > v$. $\alpha = 1.536$ $\beta = 1.570$ $\gamma = 1.628$ $2V(\text{meas.}) = \text{n.d.}$ $2V(\text{calc.}) = 77^\circ$

Cell Data: *Space Group:* $P2_1/c$. $a = 10.6776(23)$ $b = 6.9148(13)$ $c = 14.1193(29)$
 $\beta = 111.407(15)^\circ$ $Z = 4$

X-ray Powder Pattern: Xitieshan mine, China.

4.96 (10), 4.81 (10), 3.90 (9), 6.67 (6), 6.09 (5), 5.69 (5), 5.44 (5)

Chemistry:	(1)	(2)	(3)
SO_3	27.69		27.10
Al_2O_3	0.01		
Fe_2O_3	26.15		27.02
FeO	0.18		
MgO	0.03		
CaO	0.09		
Na_2O	0.07		
K_2O	0.03		
Cl	n.d.	10.05	12.00
H_2O	45.02		36.59
$-\text{O} = \text{Cl}_2$			2.71
Total	99.27		100.00

(1) Xitieshan mine, China. (2) Do.; separate analysis on type material. (3) $\text{Fe}(\text{SO}_4)\text{Cl}\cdot 6\text{H}_2\text{O}$.

Occurrence: Formed in the oxidation zone of a pyrite-rich orebody in a very arid climate.

Association: Copiapite, römerite, coquimbite, amarillite, sideronatrite, melanterite.

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

Name: For its occurrence in the Xitieshan mine, China.

Type Material: Institute of Geochemistry, Guiyang; Museum of Geology, Beijing, China.

References: (1) Li Xilin, Zhou Jingliang, and Li Jiaju (1983) Xitieshanite – a new ferric sulphate mineral. *Geochemistry (China)*, 2, 261–267 (in English). (2) (1984) *Amer. Mineral.*, 69, 1194 (abs. ref. 1). (3) Zhou Jingliang, Li Xilin, and Dong Wei (1988) The crystal structure of xitieshanite. *Kexue Tongbao*, 33(6), 502–505 (in English).