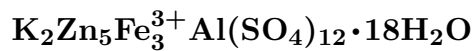


Zincovoltaites



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Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. Crystals show {111}, {100}, {110}, {211}, to 2 mm, in granular aggregates and irregular veinlets.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = ~ 3
D(meas.) = 2.765 D(calc.) = 2.767 Slowly soluble in H₂O, decomposes on exposure to the atmosphere.

Optical Properties: Transparent to translucent. *Color:* Green-black to oil-green; yellowish green in transmitted light. *Streak:* Grayish green. *Luster:* Vitreous on crystal surfaces, pitchy to resinous.

Optical Class: Isotropic, anomalously uniaxial. $n = 1.605(3)$

Cell Data: *Space Group:* $Fd\bar{3}c$. $a = 27.180(1)$ $Z = 16$

X-ray Powder Pattern: Xitieshan mine, China.

3.39 (100), 3.54 (67), 5.53 (48), 3.13 (39), 3.84 (32), 4.24 (28), 3.03 (28)

Chemistry:

	(1)	(2)
SO ₃	46.93	46.26
Al ₂ O ₃	2.50	2.46
Fe ₂ O ₃	11.21	11.53
FeO	3.20	
MnO	1.20	
ZnO	14.61	19.60
CaO	0.69	
K ₂ O	4.11	4.54
H ₂ O	15.69	15.61
Total	100.14	100.00

(1) Xitieshan mine, China; corresponding to $(\text{K}_{1.79}\text{Ca}_{0.25})_{\Sigma=2.04}(\text{Zn}_{3.69}\text{Fe}_{0.91}^{2+}\text{Mn}_{0.35})_{\Sigma=4.95}\text{Fe}_{2.89}^{3+}\text{Al}_{1.01}(\text{SO}_4)_{12.06}\cdot 17.92\text{H}_2\text{O}$. (2) $\text{K}_2\text{Zn}_5\text{Fe}_3^{3+}\text{Al}(\text{SO}_4)_{12}\cdot 18\text{H}_2\text{O}$.

Occurrence: In the oxidation zone of a Zn–Pb–Fe sulfide deposit, formed in an arid climate.

Association: Römerite, melanterite, gypsum, pyrite, quartz.

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

Name: As the *zinc* analog of *voltaites*.

Type Material: Lanzhou University, Lanzhou; Geological Museum, Ministry of Geology, Beijing, China.

References: (1) Wanmao Li, Guoying Chen, and Shurong Sun (1987) Zincovoltaites – a new sulfate mineral. *Acta Mineralogica Sinica*, 7, 307–312 (in Chinese with English abs.). (2) (1990) *Amer. Mineral.*, 75, 244–245 (abs. ref. 1).