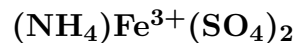


Sabieite



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Crystal Data: Hexagonal. *Point Group:* 32. Thin platelets, hexagonal, to 10 μm , constituting a powder.

Physical Properties: Hardness = n.d. $D(\text{meas.}) = \text{n.d.}$ $D(\text{calc.}) = [2.36]$ Slowly soluble in H_2O .

Optical Properties: Semitransparent. *Color:* White.

Optical Class: Uniaxial. $\omega = \text{n.d.}$ $\epsilon = \text{n.d.}$

Cell Data: *Space Group:* $[P321]$ (by analogy to synthetic). $a = 4.822$ $c = 8.1696$ $Z = 1$

X-ray Powder Pattern: Lone Creek Fall Cave, South Africa.

8.19 (100), 2.409 (30), 3.72 (20), 1.392 (20), 1.556 (15), 2.910 (10), 2.718 (10)

Chemistry:

	(1)	(2)
SO_3	61.80	60.19
Al_2O_3	0.68	
Fe_2O_3	28.64	30.02
K_2O	0.70	
$(\text{NH}_4)_2\text{O}$	8.18	9.79
Total	100.80	[100.00]

(1) Lone Creek Fall Cave, South Africa; recalculated to 100% from an original total of 100.80% after deduction of 12.77% insoluble; then corresponds to $[(\text{NH}_4)_{0.84}\text{K}_{0.04}]_{\Sigma=0.88}(\text{Fe}_{0.94}\text{Al}_{0.04})_{\Sigma=0.98}(\text{S}_{1.02}\text{O}_4)_2$. (2) $(\text{NH}_4)\text{Fe}(\text{SO}_4)_2$.

Occurrence: Formed by dehydration of loncreekite.

Association: Loncreekite, tschermigite.

Distribution: On the ceiling of Lone Creek Fall Cave, near Sabie, Eastern Transvaal, South Africa.

Name: For its occurrence near Sabie, South Africa.

Type Material: South African Geological Survey Museum, Pretoria, South Africa.

References: (1) Martini, J.E.J. (1983) Loncreekite, sabieite, and clairite, new secondary ammonium ferric-iron sulphates from Lone Creek Fall Cave, near Sabie, Eastern Transvaal. *Ann. Geol. Surv. S. Africa*, 17, 29–34. (2) (1986) *Amer. Mineral.*, 71, 229 (abs. ref. 1).