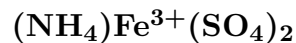


## Sabieite



©2001-2005 Mineral Data Publishing, version 1

**Crystal Data:** Hexagonal. *Point Group:* 32. Thin platelets, hexagonal, to 10  $\mu\text{m}$ , constituting a powder.

**Physical Properties:** Hardness = n.d.  $D(\text{meas.}) = \text{n.d.}$   $D(\text{calc.}) = [2.36]$  Slowly soluble in  $\text{H}_2\text{O}$ .

**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)
$\text{SO}_3$	61.80	60.19
$\text{Al}_2\text{O}_3$	0.68	
$\text{Fe}_2\text{O}_3$	28.64	30.02
$\text{K}_2\text{O}$	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).