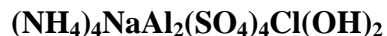


Adranosite

Crystal Data: Tetragonal. *Point Group:* 4/m 2/m 2/m. As sprays of acicular crystals to 300 μm exhibiting {100}, {110}, and {111}.

Physical Properties: *Cleavage:* n.d. *Fracture:* n.d. *Tenacity:* n.d. $D(\text{meas.}) = 2.15(1)$
 $D(\text{calc.}) = 2.176$ *Hardness* = n.d.

Optical Properties: Translucent. *Color:* White to colorless. *Streak:* White. *Luster:* Vitreous.
Optical Class: Uniaxial (-). $\omega = 1.55(1)$ $\varepsilon = 1.54(1)$

Cell Data: *Space Group:* $I4_1/acd$. $a = 18.118(3)$ $c = 11.320(3)$ $Z = 8$

X-ray Powder Pattern: La Fossa crater, Vulcano, Aeolian Islands, Sicily, Italy.
 2.980 (100), 2.265 (87), 4.530 (86), 6.398 (80), 3.020 (65) 3.202 (47), 1.902 (44)

Chemistry:	(1)	(2)
Na ₂ O	5.88	5.14
Al ₂ O ₃	17.40	16.91
K ₂ O	0.90	
(NH ₄) ₂ O	[16.52]	17.29
SO ₃	51.31	53.12
Cl	5.68	5.88
H ₂ O	[2.99]	2.99
<u>-O=Cl</u>	<u>1.28</u>	<u>1.33</u>
Total	99.40	100.00

(1) La Fossa crater, Vulcano, Aeolian Islands, Sicily, Italy; average of 6 electron microprobe analyses, H₂O calculated from structure analysis, NH₄ by the Nessler reaction and structure analysis; corresponds to $[(\text{NH}_4)_{3.89}\text{K}_{0.12}]_{\Sigma=4.01}\text{Na}_{1.16}\text{Al}_{2.09}\text{S}_{3.93}\text{O}_{15.99}\text{Cl}_{0.98}(\text{OH})_{2.03}$.

Occurrence: A sublimate on pyroclastic breccia around an active volcanic fumarole.

Association: Aiolosite, alunite, anhydrite, bismuthinite, sassolite, dimicheleite-(Br), dimicheleite-(Cl), demicheleite-(I).

Distribution: From La Fossa crater, Vulcano, Aeolian Islands, Sicily, Italy.

Name: For the ancient god of fire, *Adranos*.

Type Material: University of Milan, Italy (#2008-06).

References: (1) Demartin, F., C.M. Gramaccioli, and I. Campostrini (2010) Adranosite, $(\text{NH}_4)_4\text{NaAl}_2(\text{SO}_4)_4\text{Cl}(\text{OH})_2$, a new ammonium sulfate chloride from La Fossa crater, Vulcano, Aeolian Islands, Italy. *Can. Mineral.*, 48(2), 315-321. (2) (2011) *Amer. Mineral.*, 96, 936 (abs. ref. 1).