Aiolosite $Na_2(Na_2Bi)(SO_4)_3Cl$

Crystal Data: Hexagonal. *Point Group*: 6/*m.* As acicular to slender terminated prismatic crystals to 0.5 mm.

Physical Properties: *Cleavage*: n.d. *Fracture*: n.d. *Tenacity*: Brittle. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.589

Optical Properties: Translucent. *Color*: Colorless to white. *Streak*: White. *Luster*: Vitreous. *Optical Class*: Uniaxial (+). ω = 1.59(1) ε = 1.60(1) *n*(calc.) = 1.620 Nonpleochroic.

Cell Data: *Space Group*: $P6_3/m$. a = 9.626(3) c = 6.880(3) Z = 2

X-ray Powder Pattern: La Fossa Crater, Vulcano, Aeolian Islands, Sicily, Italy. 2.853 (100), 2.775 (85), 3.432 (45), 1.965 (35), 2.306 (25), 4.787 (20), 2.312 (20)

Chemistry:

	(1)	(2)
Na_2O	20.65	19.85
K_2O	0.96	
Bi_2O_3	32.49	37.30
SO_3	41.27	38.34
Cl	4.02	5.68
Br	0.75	
H_2O	[0.57]	
– O = (Cl + Br)	0.98	1.28
Total	99.73	100.00

(1) La Fossa Crater, Vulcano, Aeolian Islands, Sicily, Italy; electron microprobe analysis, H_2O from structure refinement; corresponds to $Na_2(Na_{1.95}K_{0.12}Bi^{3+}_{0.83})_{\Sigma=2.90}S_{3.06}O_{12.08}[Cl_{0.67}Br_{0.06}(H_2O)_{0.19}]_{\Sigma=0.92}$. (2) $Na_2(Na_2Bi)(SO_4)_3Cl$.

Mineral Group: Isotypic with apatite.

Occurrence: On altered pyroclastic breccia in an active medium-temperature intracrater volcanic fumarole.

Association: Alunite, anhydrite, demicheleite-(Br), demicheleite-(Cl), bismuthinite, panichiite.

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

Name: From Aiolos (Αίολοσ, Latinized to Aeolus), the god of the winds in Greek mythology. The type locality, the Aeolian Islands (*Isole Eolie* in Italian) took their name from him.

Type Material: Reference Collection, Department of Structural Chemistry and Inorganic Stereochemistry, University of Milan, Italy (2008-3).

References: (1) Demartin, F., C.M. Gramaccioli, I. Campostrini, and T. Pilati (2010) Aiolosite, $Na_2(Na_2Bi)(SO_4)_3Cl$, a new sulfate isotypic to apatite from La Fossa Crater, Vulcano, Aeolian Islands, Italy. Amer. Mineral., 95, 382-385.