**Crystal Data**: Orthorhombic. *Point Group*: 222. As well-formed prismatic crystals to 0.1 mm that display {100}, {120}, {011}, {010}, and {102}.

**Physical Properties**: *Cleavage*: None. *Fracture*: n.d. *Tenacity*: n.d. Hardness = n.d. D(meas.) = 2.56(1) D(calc.) = 2.551

**Optical Properties**: Transparent. *Color*: Brown; intense brown in transmitted light. *Streak*: Light brown. *Luster*: Vitreous.

*Optical Class:* Biaxial (+).  $\alpha = 1.580(2)$   $\beta = 1.590(2)$   $\gamma = 1.635(2)$  2V(meas.) = 53(3)° 2V(calc.) = 51.6° *Orientation:* X = c, Y = b, Z = a.

**Cell Data**: Space Group:  $C222_1$ . a = 9.841(1) b = 19.448(3) c = 17.847(3) Z = 4

**X-ray Powder Pattern**: La Fossa crater, Vulcano, Aeolian Islands, Sicily, Italy. 8.766 (100), 1.805 (88), 5.178 (45), 4.250 (42), 2.926 (42), 9.049 (37), 2.684 (32)

Chemistry:		(1)
	$(NH_4)_2O$	[11.05]
	K <sub>2</sub> O	4.91
	Na <sub>2</sub> O	2.82
	FeO	20.93
	MnO	0.42
	PbO	10.25
	$SO_3$	29.67
	Cl	20.80
	Br	0.45
	$-O = Cl_2$	4.75
	Total	96.55

(1) La Fossa crater, Vulcano, Aeolian Islands, Sicily, Italy; average of 8 EDS analyses supplemented by FTIR spectroscopy,  $(NH_4)_2O$  calculated from structure; corresponds to  $(NH_4)_{5.77}K_{1.42}Pb_{0.62}Na_{1.24}Fe^{2+}_{3.96}Mn_{0.08}S_{5.04}O_{20.16}Cl_{7.97}Br_{0.08}$ .

Occurrence: A fumarolic sublimate on pyroclastic breccia.

Association: Salammoniac, alunite, adranosite.

**Distribution**: From fumarole FA (~250 °C) at La Fossa crater, Vulcano, Aeolian Islands, Sicily, Italy.

**Name**: For *Acmonides* one of Ovidius' Cyclops, helpers of Hephaistos, the mythological god of fire whose forge was alleged to be located at Vulcano.

**Type Material**: Reference Collection, Department of Chemistry, University of Milan, Italy (2013-02).

**References**: (1) Demartin, F., C. Castellano, and I. Campostrini (2019) Acmonidesite, a new ammonium sulfate chloride from La Fossa crater, Vulcano, Aeolian Islands, Italy. Mineral. Mag. 83(1), 137-142. (2) (2020) Amer. Mineral., 105(10), 1598 (abs. ref. 1).