

**Crystal Data:** Triclinic. *Point Group:*  $\bar{1}$ . As well-formed, stubby to elongated prismatic crystals, to 0.15 mm.

**Physical Properties:** *Cleavage:* None. *Fracture:* Irregular to sub-conchoidal. *Tenacity:* Brittle. Hardness = n.d. D(meas.) = n.d. D(calc.) = 1.958 Fluoresces dim green under UV. Dissolves slowly in cold dilute HCl.

**Optical Properties:** Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial.  $n = 1.504$  *Interference colors:* light gray to light cyan.

**Cell Data:** *Space Group:*  $P\bar{1}$ .  $a = 10.3410(5)$   $b = 10.9600(5)$   $c = 11.1446(5)$   $\alpha = 86.985(2)^\circ$   $\beta = 65.727(2)^\circ$   $\gamma = 75.064(2)^\circ$   $Z = 2$

**X-ray Powder Pattern:** Akopan-Dal Cin cave system, Canaima National Park, Venezuela. 4.647 (100), 9.12 (56), 4.006 (53), 8.02 (40), 7.12 (33), 10.16 (32), 5.00 (29)

Chemistry:	(1)	(2)
$\text{Al}_2\text{O}_3$	23.07	23.37
$\text{Fe}_2\text{O}_3$	0.30	
$\text{SO}_3$	24.44	24.47
$\text{P}_2\text{O}_5$	10.89	10.85
$\text{H}_2\text{O}$	41.30	41.31
Total	100.00	100.00

(1) Akopan-Dal Cin cave system, Canaima National Park, Venezuela; normalized average of 11 electron microprobe analyses supplemented by IR spectroscopy,  $\text{H}_2\text{O}$  by TGA; corresponds to  $\text{Al}_{2.96}\text{Fe}_{0.03}\text{PS}_2\text{H}_{30.02}\text{O}_{28}$ . (2)  $\text{Al}_3(\text{PO}_4)(\text{SO}_4)_2(\text{OH})_2(\text{H}_2\text{O})_{10}\cdot 4\text{H}_2\text{O}$ .

**Occurrence:** In the porosity of fine-grained sand, filling spaces between boulders of weathered quartz sandstone, on the floor of a dry passage near the entrance of a cave exposed to oceanic spray and percolating groundwater containing dissolved organic matter.

**Association:** Gypsum, sanjuanite, alunite, quartz, micro-spherules of amorphous silica.

**Distribution:** From the Akopan-Dal Cin cave system, Akopan Tepui, Chimanta massif, Canaima National Park, Venezuela.

**Name:** Honors Antonio Rossi (1942-2011), professor of Sedimentary Petrology at Modena and Reggio Emilia University and an early developer of scientific speleology in Italy, in recognition of his devotion to the study of cave minerals.

**Type Material:** British Museum, London, England (BM 2012,99); at the "Museo Mineralogico e Geologico Estense, GEMMA1786" of Modena and Reggio Emilia University, Italy (2/2012); and the ETH Mineralogical collection, Zurich, Switzerland (20130).

**References:** (1) Galli, E., M.F. Brigatti, D. Malferrari, F. Sauro, and J.D. Waele (2013) Rossiantonite,  $\text{Al}_3(\text{PO}_4)(\text{SO}_4)_2(\text{OH})_2(\text{H}_2\text{O})_{10}\cdot 4\text{H}_2\text{O}$ , a new hydrated aluminum phosphate-sulfate mineral from Chimanta massif, Venezuela: Description and crystal structure. *Amer. Mineral.*, 98, 1906-1913.