Panichiite $(NH_4)_2SnCl_6$

Crystal Data: Cubic. *Point Group*: 4/*m* $\bar{3}$ 2/*m*. As octahedra to 0.2 mm.

Physical Properties: *Cleavage*: None. *Tenacity*: n.d. *Fracture*: n.d. Hardness = n.d. VHN = n.d. D(meas.) = 2.43(1) D(calc.) = 2.423 Nonfluorescent.

Optical Properties: [Transparent to translucent.] *Color*: Colorless to white or very pale yellow. *Streak*: White. *Luster*: Vitreous.
Optical Class: Isotropic. *n* = 1.68(1)

Cell Data: *Space Group*: *F*4/*m* $\bar{3}$ 2/*m*. *a* = 10.064(1) Z = 4

X-ray Powder Pattern: La Fossa crater, Vulcano Island, Aeolian Islands, Sicily, Italy.
5.811 (100), 5.032 (73), 2.516 (69), 3.035 (48), 1.779 (42), 2.250 (39), 1.937 (23)

Chemistry:

	(1)	(2)
Cl	56.57	57.88
Sn	31.62	32.30
Br	1.53	
K	1.05	
NH_4^+	[9.23]	9.82
Total	100.00	100.00

(1) La Fossa crater, Vulcano Island, Aeolian Islands, Sicily, Italy; average electron microprobe analysis, NH_4^+ by difference; corresponds to $[(NH_4)_{1.90}K_{0.10}]_{\Sigma=2.00}Sn_{0.99}(Cl_{5.94}Br_{0.07})_{\Sigma=6.01}$.
(2) $(NH_4)_2SnCl_6$.

Occurrence: A sublimate on cinder at a medium temperature intracrater fumarole (~250 °C).

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

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

Name: Honors Professor Ugo *Panichi* (1872-1966), a pioneer in the study of Vulcano minerals.

Type Material: Dipartimento di Chimica Strutturale e Stereochimica Inorganica, University of Milan, Italy (2008-01).

References: (1) Demartin, F., I. Campostrini, and C.M. Gramaccioli (2009) Panichiite, natural ammonium hexachlorostannate(IV), $(NH_4)_2SnCl_6$, from La Fossa crater, Vulcano, Aeolian Islands, Italy. Can. Mineral., 47, 367-372.