Lucabindiite $(K,NH_4)As_4O_6(Cl,Br)$

Crystal Data: Hexagonal. *Point Group*: 6/*m* 2/*m* 2/*m*. As platy hexagonal crystals, to ~ 1 mm.

Physical Properties: *Cleavage*: None. *Tenacity*: Brittle. *Fracture*: n.d. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.68

Optical Properties: Transparent to translucent. *Color*: Colorless to white. *Streak*: White. *Luster*: Vitreous.
Optical Class: n.d. *n*(calc.) = 1.88

Cell Data: *Space Group*: *P*6/*mmm*. *a* = 5.2386(7) *c* = 9.014(2) Z = 1

X-ray Powder Pattern: "La Fossa" crater, Vulcano, Aeolian Islands, Italy.
3.20 (100), 2.62 (67), 4.51 (52), 4.54 (30), 1.97 (28), 1.49 (21), 1.60 (21)

Chemistry:	(1)	(2)
K_2O	5.14	4.89
As_2O_3	84.71	82.10
Cl	3.63	3.68
Br	6.92	8.29
F	0.77	
$(NH_4)_2O$	[2.73]	2.70
-O=F,Cl,Br	1.84	1.66
Total	102.06	100.00

(1) "La Fossa" crater, Vulcano, Aeolian Islands, Italy; average of 12 SEM-EDS analyses supplemented by FTIR spectroscopy, $(NH_4)_2O$ calculated from stoichiometry; corresponds to $[K_{0.51}(NH_4)_{0.49}]_{\Sigma=1.00}As_{4.00}O_{5.93}(Cl_{0.48}Br_{0.40}F_{0.19})_{\Sigma=1.07}$. (2) $(K,NH_4)As_4O_6(Cl,Br)$.

Occurrence: As encrustations on pyroclastic breccia around an active volcanic fumarole.

Association: Arsenolite, sal ammoniac, sulfur, amorphous arsenic-rich sulfurite.

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

Name: Honors Luca Bindi (b. 1971), Professor of Mineralogy and former Head of the Division of Mineralogy, Natural History Museum, University of Florence, Italy, for contributions to the study of the structural complexity in minerals (i.e., incommensurate structures, superstructures, twinned structures) and integrating together mineralogy and the most advanced fields of crystallography.

Type Material: Museum "C.L. Garavelli", Department of Geology and Geophysics, University of Bari, Italy, (11/nm-V28).

References: (1) Garavelli, A., D. Mitolo, D. Pinto, and F. Vurro (2013) Lucabindiite, $(K,NH_4)As_4O_6(Cl,Br)$, a new fumarole mineral from the "La Fossa" crater at Vulcano, Aeolian Islands, Italy. Amer. Mineral., 98, 470-477.