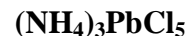


**Brontesite**

**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. Crystals tabular on {010}, to 0.1 mm; pseudotetragonal, exhibiting forms {110}, {011}, {121}.

**Physical Properties:** *Cleavage:* None observed. *Fracture:* None observed.  
*Tenacity:* n.d. *Hardness =* n.d. *D(meas.) =* 2.72(1) *D(calc.) =* 2.728

**Optical Properties:** Translucent. *Color:* Colorless to white. *Streak:* White.  
*Luster:* Vitreous.  
*Optical Class:* Biaxial. *n =* 1.70(3) *Orientation:* n.d.

**Cell Data:** *Space Group:* Pnma. *a =* 8.434(1) *b =* 15.759(2) *c =* 8.462(1) *Z =* 4

**X-ray Powder Pattern:** La Fossa crater, Vulcano, Aeolian Islands, Italy.  
3.067 (100), 2.020 (80), 2.710 (78), 1.910 (78), 2.421 (75), 1.491 (75), 1.457 (65)

<b>Chemistry:</b>	(1)	(2)
K	1.1	
Pb	47.8	47.25
Cl	36.1	40.43
Br	3.7	
NH <sub>4</sub>	11.3	12.32
Total	100.0	100.00

(1) La Fossa crater, Vulcano, Sicily, Italy; average of 6 EDS analyses, NH<sub>4</sub> by difference after confirmation by IR and microchemical tests, corresponding to [(NH<sub>4</sub>)<sub>2.87</sub>K<sub>0.13</sub>]<sub>Σ=3.00</sub>Pb<sub>1.09</sub>(Cl<sub>4.79</sub>Br<sub>0.21</sub>)<sub>Σ=5.00</sub>. (2) (NH<sub>4</sub>)<sub>3</sub>PbCl<sub>5</sub>.

**Occurrence:** A product of fumarolic activity.

**Association:** Bismuthinite, godovikovite, demicheleite-(Cl), demicheleite-(Br), alunite.

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

**Name:** For Brontes, one of the Cyclopes and a son of Uranus, helpers of the Greek god of fire whose workshops were alleged to be located at Vulcano.

**Type Material:** Department of Structural Chemistry and Inorganic Stereochemistry, University of Milan, Italy (reference collection 2008-03).

**References:** (1) Demartin, F., C.M. Gramaccioli, and I. Campostrini (2009) Brontesite, (NH<sub>4</sub>)<sub>3</sub>PbCl<sub>5</sub>, a new product of fumarolic activity from La Fossa crater, Vulcano, Aeolian Islands, Italy, *Can. Mineral.*, 47, 1237–1243. (2) (2010) *Amer. Mineral.*, 95, 1122 (abs. ref. 1).