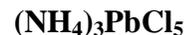


**Brontesite**

**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.  $D(\text{meas.}) = 2.72(1)$   $D(\text{calc.}) = 2.728$

**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	
$\text{NH}_4$	11.3	12.32
Total	100.0	100.00

(1) La Fossa crater, Vulcano, Sicily, Italy; average of 6 EDS analyses,  $\text{NH}_4$  by difference after confirmation by IR and microchemical tests, corresponding to  $[(\text{NH}_4)_{2.87}\text{K}_{0.13}]_{\Sigma=3.00}\text{Pb}_{1.09}(\text{Cl}_{4.79}\text{Br}_{0.21})_{\Sigma=5.00}$ . (2)  $(\text{NH}_4)_3\text{PbCl}_5$ .

**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,  $(\text{NH}_4)_3\text{PbCl}_5$ , 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).