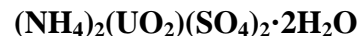


**Beshtauite**

**Crystal Data:** Monoclinic. *Point Group:* 2/m. Crystals are blocky prismatic, to 0.2 mm.

**Physical Properties:** *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = ~ 2  
D(meas.) = n.d. D(calc.) = 3.046 Fluoresces green under SW and LW UV. Radioactive.  
Slowly soluble in water.

**Optical Properties:** Transparent. *Color:* Light green, colorless in thin section. *Streak:* White.  
*Luster:* Vitreous.

*Optical Class:* Biaxial (+).  $\alpha = 1.566(3)$   $\beta = 1.566(3)$   $\gamma = 1.592(3)$   $2V(\text{meas.}) = < 10^\circ$   
 $2V(\text{calc.}) = 0^\circ$

**Cell Data:** *Space Group:*  $P2_1/c$ .  $a = 7.7360(8)$   $b = 7.3712(5)$   $c = 20.856(2)$   $\beta = 102.123(8)^\circ$   
 $Z = 4$

**X-ray Powder Pattern:** Beshtau uranium deposit, Mount Beshtau, Northern Caucasus, Russia.  
6.86 (100), 3.410 (38), 5.307 (36), 5.005 (35), 3.081 (24), 2.881 (20), 5.997 (19)

<b>Chemistry:</b>	(1)	(2)
(NH <sub>4</sub> ) <sub>2</sub> O	[10.33]	9.75
UO <sub>3</sub>	53.21	53.53
SO <sub>3</sub>	29.40	29.97
H <sub>2</sub> O	[7.06]	6.75
Total	100.00	100.00

(1) Beshtau uranium deposit, Mount Beshtau, Northern Caucasus, Russia; average of 7 electron microprobe analyses supplemented by FTIR spectroscopy, H<sub>2</sub>O calculated by difference, (NH<sub>4</sub>)<sub>2</sub>O calculated from measured N (5.56 wt. %); corresponds to (NH<sub>4</sub>)<sub>2.12</sub>U<sub>0.99</sub>S<sub>1.96</sub>O<sub>9.91</sub>(H<sub>2</sub>O)<sub>2.09</sub>.

(2) (NH<sub>4</sub>)<sub>2</sub>(UO<sub>2</sub>)(SO<sub>4</sub>)<sub>2</sub>·2H<sub>2</sub>O.

**Occurrence:** A secondary mineral in the oxidation zone of a hydrothermal vein-type uranium deposit in porphyritic granite.

**Association:** Rozenite, gypsum, lemontovite, marcasite, pyrite, halloysite, opal.

**Distribution:** From the Beshtau uranium deposit, Mount Beshtau, Stavropol region, Northern Caucasus, Russia.

**Name:** For the mine that produced the first specimens.

**Type Material:** A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (93775).

**References:** (1) Pekov, I.V., S.V. Krivovichev, V.O. Yapaskurt, N.V. Chukanov, and D.I. Belakovskiy (2014) Beshtauite, (NH<sub>4</sub>)<sub>2</sub>(UO<sub>2</sub>)(SO<sub>4</sub>)<sub>2</sub>·2H<sub>2</sub>O, a new mineral from Mount Beshtau, Northern Caucasus, Russia. *Amer. Mineral.*, 99, 1183-1787.