

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)

Chemistry:	(1)	(2)
$(\text{NH}_4)_2\text{O}$	[10.33]	9.75
UO_3	53.21	53.53
SO_3	29.40	29.97
H_2O	[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_2O calculated by difference, $(\text{NH}_4)_2\text{O}$ calculated from measured N (5.56 wt. %); corresponds to $(\text{NH}_4)_{2.12}\text{U}_{0.99}\text{S}_{1.96}\text{O}_{9.91}(\text{H}_2\text{O})_{2.09}$.

(2) $(\text{NH}_4)_2(\text{UO}_2)(\text{SO}_4)_2 \cdot 2\text{H}_2\text{O}$.

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, $(\text{NH}_4)_2(\text{UO}_2)(\text{SO}_4)_2 \cdot 2\text{H}_2\text{O}$, a new mineral from Mount Beshtau, Northern Caucasus, Russia. *Amer. Mineral.*, 99, 1183-1187.