## Uramphite $(NH_4)_2(UO_2)_2(PO_4)_2 \cdot 6H_2O$



**Crystal Data:** Tetragonal (synthetic). *Point Group:* $4/m\ 2/m\ 2/m$. Square tablets, to 0.2 mm, in rosettes and coatings.

**Physical Properties:** *Cleavage:* Distinct in two directions. Hardness = n.d. D(meas.) = 3.7 D(calc.) = 3.26 Radioactive; fluoresces yellow-green.

**Optical Properties:** Semitransparent. *Color:* Bottle-green to pale green. *Luster:* Vitreous. *Optical Class:* Biaxial (–), anomalous. *Pleochroism:* $X$ = colorless; $Y = Z$ = pale green. $\alpha = 1.564$ $\beta = 1.585$ $\gamma = 1.585$ 2V(meas.) = 0°–3°

**Cell Data:** *Space Group:* $P4/ncc$ (synthetic). $a = 7.02(1)$ $c = 18.08(4)$ Z = 4

**X-ray Powder Pattern:** Tura-Kavak deposit, Kyrgyzstan.
3.78 (10), 2.22 (9), 1.694 (8.5), 2.75 (8), 2.12 (8), 3.24 (7), 1.399 (7)

**Chemistry:**

| | (1) | (2) |
|---|---|---|
| $UO_3$ | 68.70 | 66.66 |
| $P_2O_5$ | 15.63 | 16.54 |
| $NH_4$ | 4.60 | 4.20 |
| $H_2O$ | 11.00 | 12.60 |
| Total | 99.93 | 100.00 |

(1) Tura-Kavak deposit, Kyrgyzstan; corresponds to $(NH_4)_{2.2}(UO_2)_{2.3}(PO_4)_{2.0} \cdot 5.5H_2O$.
(2) $(NH_4)_2(UO_2)_2(PO_4)_2 \cdot 6H_2O$.

**Mineral Group:** Meta-autunite group.

**Occurrence:** In the oxidized zone of a uranium-coal deposit, in fractures in the coal at depths between 20 and 50 m.

**Association:** n.d.

**Distribution:** From the Tura-Kavak uranium-coal deposit, Kyrgyzstan.

**Name:** For its content of URanium, AMmonium, and PHosphate.

**Type Material:** n.d.

**References:** (1) Nekrasova, Z.A. (1957) Hydrous phosphate of uranyl and ammonium (uramphite), $NH_4(UO_2)(PO_4) \cdot 3H_2O$. Problems of uranium geology, 67–72 (in Russian). (2) (1959) Amer. Mineral., 44, 464 (abs. ref. 1). (3) Markovic, M. and N. Pavkovic (1988) J. Res. NBS, 93, 557. (4) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union, 222.