

Arsenuranospathite

$\text{HAl}(\text{UO}_2)_4(\text{AsO}_4)_4 \cdot 40\text{H}_2\text{O}$

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Crystal Data: Orthorhombic, pseudotetragonal. *Point Group:* n.d. As crusts of wedgelike bladed or acicular crystals, to 0.3 mm, exhibiting {100}, {010}, {001}, and rarely {110}.

Physical Properties: *Cleavage:* Perfect on {001}; good on {100} and {010}. *Hardness* = ~ 2 *D*(meas.) = n.d. *D*(calc.) = 2.54 Weak greenish fluorescence under SW UV. Radioactive. Dehydrates readily in air.

Optical Properties: Transparent to translucent. *Color:* Pale yellow, yellowish brown. *Streak:* White.

Optical Class: Biaxial (-). *Orientation:* $X = c$; $Z =$ elongation; length positive.

Dispersion: $r > v$. $\alpha = \ll 1.538$ $\beta = \simeq 1.538$ $\gamma = 1.542(3)$ $2V(\text{meas.}) = \sim 52^\circ$

Cell Data: *Space Group:* $P4_2/n$ (pseudocell). $a = 7.16$ $c = 30.37$ $Z = 2$

X-ray Powder Pattern: Menzenschwand, Germany.

14.62 (10), 7.62 (10), 3.49 (9), 5.03 (8), 3.59 (5), 3.24 (4), 2.25 (3)

Chemistry: (1) Menzenschwand, Germany; Al, As, and U confirmed by microchemical and spectrochemical techniques, formula established by analogy to uranospathite and similarity of X-ray pattern to synthetic material.

Occurrence: A very rare secondary mineral in uranium deposits.

Association: Zeunerite, uranophane, studtite, uranospinite, ianthinite, metakirchheimerite, "uranocircite"-heinrichite, barite, "limonite".

Distribution: In Germany, in the Black Forest, at Menzenschwand and on the dump of the Sophia mine, near Wittichen. From the Rabéjac uranium deposit, seven km south-southeast of Lodève, Hérault, France.

Name: As the *arsenate* analog of *uranospathite*.

Type Material: n.d.

References: (1) Walenta, K. (1978) Uranospathite and arsenuranospathite. *Mineral. Mag.*, 42, 117–128. (2) (1979) *Amer. Mineral.*, 64, 465 (abs. ref. 1).