Arsenuranospathite  

\[ \text{HAI(UO}_2\text{)}_4(\text{AsO}_4)_4 \cdot 40\text{H}_2\text{O} \]

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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 = \( \sim 2 \)  
D(meas.) = n.d.  D(calc.) = 2.54  Weak greenish fluorescence under SW UV.  Radioactive.  Dehydrates readily in air.  

Streak: White.  
Optical Class: Biaxial \((-\)\).  Orientation: \( X = c; Z = \text{elongation}; \text{length positive.} \)  
Dispersion: \( r > v \).  \( \alpha = \ll 1.538 \)  \( \beta = \approx 1.538 \)  \( \gamma = 1.542(3) \)  
2V(meas.) = \( \sim 52^\circ \)  

Cell Data:  Space Group: \( P4_2/n \) (pseudocell).  
\[ a = 7.16 \quad c = 30.37 \quad Z = 2 \]  

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.  