Arsenovanmeersscheite $U(UO_2)_3(AsO_4)_2(OH)_6 \cdot 4H_2O$

Crystal Data: Orthorhombic. *Point Group*: *mm*2. As crusts of lath-like crystals elongated along [001] and flattened on (010) to 0.1 mm, showing (100), (010) and (001).

Physical Properties: *Cleavage*: Good on (010) and (001). *Tenacity*: Brittle. *Fracture*: Irregular. Hardness = ~2 D(meas.) = n.d. D(calc.) = 4.91 Nonfluorescent. Soluble in dilute HCl.

Optical Properties: Transparent. *Color*: Yellow. *Streak*: Yellowish. *Luster*: Vitreous. *Optical Class*: Biaxial (-). α = 1.725(3) β = 1.742(3) γ = 1.745(3) 2V(calc.) = 46° *Orientation*: $X = b$, $Y = a$, $Z = c$.

Cell Data: *Space Group*: $P2_1mn$. a = 17.36(2) b = 16.96(2) c = 7.02(1) Z = 4

X-Ray Diffraction Pattern: Menzenschwand, Baden-Württemberg, Germany. 8.56 (10), 12.21 (8), 6.07 (8), 4.25 (8), 5.42 (7), 3.33 (7), 3.11 (6)

Chemistry:

	(1)
BaO	1.69
CaO	0.54
UO_3	78.18
As_2O_5	8.46
P_2O_5	3.52
H_2O	[7.61]
Total	100.00

(1) Menzenschwand, Baden-Württemberg, Germany; average electron microprobe analysis, H_2O by difference; corresponds to $Ba_{0.17}Ca_{0.15}U_{4.18}As_{1.12}P_{0.75}H_{12.91}O_{24}$.

Occurrence: A secondary mineral in a uranium deposit.

Association: Vanmeersschelte, schoepite, pyrite, quartz.

Distribution: From Menzenschwand, southern Black Forest, Baden-Württemberg, Germany.

Name: Prefix, *arseno*, indicates the arsenate analogue of *vanmeersscheite*.

Type Material: State Museum of Natural History, Stuttgart, Germany.

References: (1) Walenta, K. and T. Theye (2007) Arsenovanmeersscheit, ein neues Uranmineral von der Uranlagerstätte Menzenschwand im südlichen Schwarzwald. Aufschluss, 58, 159-164.