

Metavanmeersscheite**U(UO₂)₃(PO₄)₂(OH)₆•2H₂O**

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Crystal Data: Orthorhombic. *Point Group:* 2/m 2/m 2/m. As tabular crystals, flattened on {010} and elongated along [001], modified by {101}, {101}, {100}, to 0.4 mm; usually in divergent groups.

Physical Properties: *Cleavage:* Good on {010}; fair on {100}. *Hardness* = n.d. D(meas.) = n.d. D(calc.) = 4.49 Fluoresces bright green in SW and LW UV. Radioactive.

Optical Properties: Semitransparent. *Color:* Canary-yellow. *Optical Class:* Biaxial (-). *Pleochroism:* Weak; yellow to pale yellow. $\alpha = \sim 1.67$ $\beta = \sim 1.68$ $\gamma = \sim 1.69$ $2V(\text{meas.}) = \sim 83^\circ$

Cell Data: *Space Group:* *Fddd.* $a = 34.18$ $b = 33.88$ $c = 14.074$ $Z = 32$

X-ray Powder Pattern: Kobokobo pegmatite, Congo. 8.49 (100), 6.01 (90), 3.073 (70), 2.886 (60), 5.38 (50), 4.23 (50), 3.516 (50)

Chemistry:

	(1)	(2)
UO ₃	83.24	83.14
P ₂ O ₅	10.20	10.31
H ₂ O	[6.56]	6.55
Total	[100.00]	100.00

(1) Kobokobo pegmatite, Congo; by electron microprobe, average of five analyses, H₂O by difference; corresponds to U(UO₂)_{3.01}(PO₄)_{1.98}(OH)₆•2.02H₂O. (2) U(UO₂)₃(PO₄)₂(OH)₆•2H₂O.

Occurrence: A rare secondary mineral in the uraniferous zone of an altered granite pegmatite, formed by dehydration of vanmeersscheite.

Association: Vanmeersscheite, studdite.

Distribution: From the Kobokobo pegmatite, Lusungu River district, Kivu Province, Congo (Zaire).

Name: The prefix *meta* indicates the dehydration product of *vanmeersscheite*.

Type Material: University of Liège, Liège, F360; Royal Museum of Central Africa, Tervuren, Belgium, RMG13749.

References: (1) Piret, P. and M. Deliens (1982) La vanmeersscheite U(UO₂)₃(PO₄)₂(OH)₆•4H₂O, et la méta-vanmeersscheite U(UO₂)₃(PO₄)₂(OH)₆•2H₂O, nouveaux minéraux. Bull. Minéral., 105, 125–128 (in French with English abs.). (2) (1982) Amer. Mineral., 67, 1077 (abs. ref. 1).