

Moreauite **$\text{Al}_3(\text{UO}_2)(\text{PO}_4)_3(\text{OH})_2 \cdot 13\text{H}_2\text{O}$**

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Crystal Data: Monoclinic. *Point Group:* $2/m$. As tabular crystals flattened on {100}, may be elongated along [010], to 0.2 mm; as nodules or subparallel aggregates of tablets resembling “open books.”

Physical Properties: *Cleavage:* Good on {100}, micaceous. *Hardness* = n.d.
D(meas.) = 2.64(5) *D(calc.)* = 2.61 *Radioactive;* bright green fluorescence under SW and LW UV.

Optical Properties: Translucent to opaque. *Color:* Greenish yellow. *Luster:* Vitreous.
Optical Class: Biaxial (-). *Orientation:* $Y = b; Z \simeq c; X \approx a^*$. $\alpha = 1.540(3)$ $\beta = 1.552(2)$
 $\gamma = 1.558(2)$ $2V(\text{meas.}) = \text{n.d.}$ $2V(\text{calc.}) = 70^\circ$

Cell Data: *Space Group:* $P2_1/c$. $a = 23.41(6)$ $b = 21.44(4)$ $c = 18.34(3)$ $\beta = 92.0(1)^\circ$
 $Z = 16$

X-ray Powder Pattern: Kobokobo pegmatite, Congo (fully hydrated).
 10.80 (100), 11.69 (80), 9.13 (70), 2.931 (70), 14.02 (60), 3.043 (60), 5.43 (40)

Chemistry:	(1)	(2)	(3)
UO_3	38.9	32.8	31.63
P_2O_5	27.2	23.0	23.55
Al_2O_3	20.4	17.2	16.92
H_2O	[13.5]	[27.0]	27.90
Total	[100.0]	[100.0]	100.00

(1) Kobokobo pegmatite, Congo; by electron microprobe, average of five grains, partially dehydrated, H_2O by difference, corresponding to $\text{Al}_{3.05}(\text{U}_{1.04}\text{O}_2)(\text{P}_{0.97}\text{O}_4)_3(\text{OH})_{1.94} \cdot 13\text{H}_2\text{O}$.
 (2) Do.; H_2O calculated from density, supported by TGA. (3) $\text{Al}_3(\text{UO}_2)(\text{PO}_4)_3(\text{OH})_2 \cdot 13\text{H}_2\text{O}$.

Occurrence: A rare secondary mineral in the oxidized uraniferous zone of a complex granite pegmatite.

Association: Furongite, ranunculite, phosphosiderite.

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

Name: Honors Professor Jules Moreau (1931–), Belgian mineralogist, Catholic University of Louvain, Louvain, Belgium.

Type Material: Royal Museum of Central Africa, Tervuren, Belgium, RMG6601, RMG6197, RMG6203.

References: (1) Deliens, M. and P. Piret (1985) Les phosphates d'uranyle et d'aluminium de Kobokobo. VII. La moreauïte, $\text{Al}_3\text{UO}_2(\text{PO}_4)_3(\text{OH})_2 \cdot 13\text{H}_2\text{O}$, nouveau minéral. Bull. Minéral., 108, 9–13 (in French with English abstract). (2) (1985) Amer. Mineral., 70, 1330–1331 (abs. ref. 1).