

Mundite

$\text{Al}(\text{UO}_2)_3(\text{PO}_4)_2(\text{OH})_3 \cdot 5.5\text{H}_2\text{O}$

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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$ or $mm2$. As tabular rectangular crystals, flattened on {010} and elongated along [001], to 0.5 mm.

Physical Properties: *Cleavage:* Perfect on {010}, {100}, {001}. *Hardness* = n.d.
D(meas.) = > 4.05 D(calc.) = 4.295 Radioactive; fluoresces pale green in LW and SW UV.

Optical Properties: Transparent. *Color:* Golden yellow; pale yellow in transmitted light.
Luster: Vitreous.

Optical Class: Biaxial (-). *Pleochroism:* Weak. *Orientation:* $X = b$; $Y = c$; $Z = a$. $\alpha = [1.62]$
 $\beta = 1.682(2)$ $\gamma = 1.688(2)$ $2V(\text{meas.}) = 33^\circ$

Cell Data: *Space Group:* $Pm\bar{c}n$ or $P2_1cn$. $a = 17.08(3)$ $b = 30.98(5)$ $c = 13.76$
 $Z = 16$

X-ray Powder Pattern: Kobokobo pegmatite, Congo.
7.80 (100), 3.37 (70), 3.87 (60), 3.06 (50), 5.74 (40), 3.00 (40), 4.23 (30)

Chemistry:	(1)	(2)
UO_3	72.20	72.90
P_2O_5	12.55	12.06
Al_2O_3	4.45	4.33
H_2O	[10.80]	10.71
Total	[100.00]	100.00

(1) Kobokobo pegmatite, Congo; by electron microprobe, average of four analyses, H_2O by difference. (2) $\text{Al}(\text{UO}_2)_3(\text{PO}_4)_2(\text{OH})_3 \cdot 5.5\text{H}_2\text{O}$.

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

Association: Phuralumite, upalite, ranunculite, threadgoldite, eylettersite.

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

Name: Honors Professor Walter Mund (1892–1956), radiochemist, Catholic University of Louvain, Louvain, Belgium.

Type Material: Royal Museum of Central Africa, Tervuren, Belgium, RMG11888.

References: (1) Deliens, M. and P. Piret (1981) Les phosphates d'uranyle et d'aluminium de Kobokobo. V. La mundite, nouveau minéral. Bull. Minéral., 104, 669–671 (in French with English abs.). (2) (1982) Amer. Mineral., 67, 624 (abs. ref. 1).