

Furongite**Al₂(UO₂)(PO₄)₂(OH)₂·8H₂O**

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Crystal Data: Triclinic. *Point Group:* $\bar{1}$ or 1. As tabular crystals, to 0.5 mm, in rosettes, and dense cryptocrystalline aggregates.

Physical Properties: *Cleavage:* On $\{\bar{1}11\}$ and $\{1\bar{1}1\}$, very perfect. *Tenacity:* Brittle. Hardness = n.d. $D(\text{meas.}) = 2.82\text{--}3.0$ $D(\text{calc.}) = 2.92$ Radioactive; strong pale yellowish green fluorescence under UV.

Optical Properties: Translucent. *Color:* Bright to pale yellow, lemon-yellow; pale yellow in transmitted light. *Luster:* Vitreous.

Optical Class: Biaxial (-). *Pleochroism:* Observed, in yellows. *Orientation:* $Z \wedge \{\bar{1}11\} \simeq 38^\circ$. $\alpha = 1.538\text{--}1.549$ $\beta = 1.558\text{--}1.567$ $\gamma = 1.566\text{--}1.575$ $2V(\text{meas.}) = 65^\circ\text{--}80^\circ$ $2V(\text{calc.}) = 64^\circ$

Cell Data: *Space Group:* $P\bar{1}$ or $P1$. $a = 19.227\text{--}19.271$ $b = 14.094\text{--}14.173$
 $c = 12.102\text{--}12.136$ $\alpha = 67.21^\circ\text{--}67.62^\circ$ $\beta = 115.45^\circ\text{--}115.64^\circ$ $\gamma = 94.51^\circ\text{--}94.58^\circ$ $Z = 4$

X-ray Powder Pattern: Hunan Province, China.

10.2 (100), 8.62 (80), 4.310 (50), 3.639 (40), 2.868 (35), 5.553 (30), 5.096 (30)

Chemistry:

	(1)	(2)	(3)
UO ₃	41.40	49.61	41.33
P ₂ O ₅	18.54	18.56	20.51
SiO ₂	0.80		
Al ₂ O ₃	13.67	9.38	14.73
Fe ₂ O ₃	0.61		
MgO	0.015		
CaO	0.094		
BaO	0.59		
K ₂ O	0.11		
H ₂ O ⁺	14.54		
H ₂ O ⁻	9.36		
H ₂ O		22.45	23.43
Total	99.729	100.00	100.00

(1) Hunan Province, China. (2) Kobokobo pegmatite, Congo; by electron microprobe, H₂O by TGA. (3) Al₂(UO₂)(PO₄)₂(OH)₂·8H₂O.

Occurrence: In the oxidation zone of a uranium deposit (Hunan Province, China); in a complex granite pegmatite (Kobokobo pegmatite, Congo).

Association: Variscite, evansite, autunite, halloysite, “opal”, “limonite” (Hunan Province, China); moreauite (Kobokobo pegmatite, Congo).

Distribution: From an undefined locality in western Hunan Province, China. At the Kobokobo pegmatite, Lusungu River district, Kivu Province, Congo (Zaire).

Name: From a poetic name for Hunan Province, China.

Type Material: n.d.

References: (1) Hunan 230 Laboratory, Hunan 305 Geological Team and X-Ray Laboratory, Wahan Geological Institute (1976) Furongite – a new uranium mineral found in China. *Acta Geologica Sinica*, 2, 203–204 (in Chinese). (2) (1978) *Amer. Mineral.*, 63, 425 (abs. ref. 1). (3) Shen Jinchuan and Peng Zhizhong (1981) The crystal structure of furongite. *Acta Cryst.*, A37 supplement, C186. (4) Deliens, M. and P. Piret (1985) Les phosphates d’uranyle et d’aluminium de Kobokobo, VIII. La furongite. *Ann. Soc. Géol. Belg.*, 108, 365–368 (in French with English abs.).

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