

Derriksite **$\text{Cu}_4(\text{UO}_2)(\text{Se}^{4+}\text{O}_3)_2(\text{OH})_6$**

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Crystal Data: Orthorhombic. *Point Group:* $mm2$. As well-formed wedgelike crystals, elongated along [001], flattened on {100}, to 0.7 mm, exhibiting {010}, {100}, {110}, and {121}; typically forms incrustations.

Physical Properties: *Cleavage:* On {010}, very good. Hardness = n.d. $D(\text{meas.}) = \text{n.d.}$ $D(\text{calc.}) = 4.61$ Radioactive.

Optical Properties: Semitransparent. *Color:* Dark green to bottle-green.
Optical Class: Biaxial (-). *Orientation:* $X = a$; $Y = b$; $Z = c$. $\alpha = 1.77$ $\beta = [1.85]$ (β')
 $\gamma = [1.89]$ (γ') $2V(\text{meas.}) = 68(19)^\circ$

Cell Data: *Space Group:* $Pn2_1m$. $a = 5.570(2)$ $b = 19.088(8)$ $c = 5.965(2)$ $Z = 2$

X-ray Powder Pattern: Musonoi mine, Congo.
4.78 (FFF), 4.072 (FF), 3.748 (FF), 4.352 (F), 3.218 (F), 5.35 (mF), 4.197 (mF)

Chemistry:	(1)	(2)
SeO_2	24.87	25.21
UO_3	32.67	32.50
CuO	35.67	36.15
H_2O	8.10	6.14
Total	101.31	100.00

- (1) Musonoi mine, Congo; by electron microprobe, H_2O partially adsorbed.
(2) $\text{Cu}_4(\text{UO}_2)(\text{SeO}_3)_2(\text{OH})_6$ confirmed by crystal-structure analysis.

Occurrence: Very rare in the oxidized portions of a selenium-bearing Cu–Co deposit.

Association: Selenian digenite, chalcomenite, demesmaekerite, malachite.

Distribution: From the Musonoi Cu–Co mine, near Kolwezi, Katanga Province, Congo (Shaba Province, Zaire).

Name: Honors Jean Marie François Joseph Derriks (1912–1993), Belgian geologist who studied the Shinkolobwe uranium deposit.

Type Material: University of Pierre and Marie Curie, Paris, 204, 12.251; Natural History Museum, Paris, 181.35; National School of Mines, Paris, France, 9.104.

References: (1) Cesbron, F., P. Pierrot, and T. Verbeek (1971) La derriksite, $\text{Cu}_4(\text{UO}_2)(\text{SeO}_3)_2(\text{OH})_6 \cdot \text{H}_2\text{O}$, une nouvelle espèce minérale. Bull. Minéral., 94, 534–537 (in French with English abs.). (2) (1972) Amer. Mineral., 57, 1912–1913 (abs. ref. 1). (3) Ginderow, D. and F. Cesbron (1983) Structure de la derriksite, $\text{Cu}_4(\text{UO}_2)(\text{SeO}_3)_2(\text{OH})_6$. Acta Cryst., 39, 1605–1607 (in French with English abs.).