

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Crystals, flattened on {001}, may be lathlike, rounded, to 0.5 cm; in parallel aggregates, lamellar, scaly; massive.

Physical Properties: *Cleavage:* {110}, perfect; two others, in the [001] zone, indistinct. Hardness = 4 D(meas.) = 4.91–5.03 D(calc.) = [5.14] Radioactive.

Optical Properties: Translucent, transparent in thin fragments. *Color:* Dark green to nearly black; green in transmitted light. *Streak:* Green. *Luster:* Vitreous.

Optical Class: Biaxial, (+) or (–). *Pleochroism:* Yellow-green to blue-green. *Orientation:* Z \wedge elongation \simeq 40°. *Dispersion:* Strong. $\alpha = 1.76$ –1.77 $\beta = 1.78$ –1.79 $\gamma = 1.78$ –1.82 2V(meas.) = \sim 90°

Cell Data: *Space Group:* $P\bar{1}$ (probable). $a = 7.855(5)$ $b = 5.449(4)$ $c = 6.089(4)$
 $\alpha = 91.44(5)^\circ$ $\beta = 101.90(5)^\circ$ $\gamma = 89.2(5)^\circ$ $Z = 2$

X-ray Powder Pattern: Kalongwe, Congo.
 4.29 (10), 2.92 (8), 5.06 (4), 2.56 (4), 2.09 (3), 1.85 (3), 1.47 (3)

Chemistry:	(1)	(2)
UO ₃	71.23	71.22
CuO	19.20	19.81
H ₂ O	9.57	8.97
Total	[100.00]	100.00

(1) Shinkolobwe, Congo; recalculated to 100% after deduction of SiO₂ 0.28%, MgO 0.57%, CaO 0.26% as impurities. (2) Cu(UO₂)(OH)₄.

Occurrence: A rare secondary mineral in the oxide zone of hydrothermal copper-bearing uranium deposits.

Association: Cuprosklodowskite, kasolite, sklodowskite, malachite, chalcocite, chalcopyrite, uraninite, goethite (Kalongwe, Congo); curite, uranophane, sharpite (Shinkolobwe, Congo).

Distribution: In Congo (Zaire), in Katanga (Shaba) Province, from the Luiswishi mine; at Kalongwe; from Shinkolobwe; at Kambove; from Swambo; and in the Musonoi mine, near Kolwezi. In the Rabéjac uranium deposit, seven km south-southeast of Lodève, Hérault, France.

Name: To honor Pierre Van den Brande (1896–1957), Belgian geologist, who discovered the uranium deposit at Kalongwe, Congo.

Type Material: Natural History Museum, Paris, France, 134-72; The Natural History Museum, London, England, 1933,261–263.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 632–633 [vandenbrandite]. (2) Milne, I.H. and E.W. Nuffield (1951) Studies of radioactive compounds: I – vandenbrandeite. Amer. Mineral., 36, 394–410. (3) Frondel, C. (1958) Systematic mineralogy of uranium and thorium. U.S. Geol. Sur. Bull. 1064, 100–103. (4) Rosenzweig, A. and R.R. Ryan (1977) Vandenbrandeite CuUO₂(OH)₄. Crystal Structure Comm., 6, 53–56.