

**Crystal Data:** Monoclinic. *Point Group:* 2/m. Rare crystals, to 4 mm, elongated along [010], with prominent {100}, {001}, smaller {011}, {110}, {111}, {1̄11}, {1̄13}; may form branching aggregates. *Twinning:* Composition plane {001}.

**Physical Properties:** *Cleavage:* Perfect on {001}. Hardness = ~2 D(meas.) = 3.62 D(calc.) = 3.16 Radioactive.

**Optical Properties:** Translucent. *Color:* Citron-yellow, canary-yellow, pale yellow. *Optical Class:* Biaxial (-); some optical properties quoted here may be those of metavanuralite. *Pleochroism:* Strong; X = colorless; Y = Z = yellow. *Orientation:* Z = b; X ≈ c; Y ≈ a. *Dispersion:* r < v, weak. α = 1.65 β = 1.85 γ = 1.90 2V(meas.) = 44° 2V(calc.) = 46°

**Cell Data:** *Space Group:* A2<sub>1</sub>/a. a = 10.55(3) b = 8.44(3) c = 24.52(5) β = 103°(20)' Z = 4

**X-ray Powder Pattern:** Mounana mine, Gabon. 11.98 (FFF), 5.98 (FF), 3.975 (Fd), 3.231 (F), 3.180 (F), 5.14 (mF), 6.53 (mf)

Chemistry:	(1)	(2)
UO <sub>3</sub>	59.03	56.52
V <sub>2</sub> O <sub>5</sub>	17.74	17.97
Al <sub>2</sub> O <sub>3</sub>	5.05	5.04
H <sub>2</sub> O	18.40	20.47
Total	100.22	100.00

(1) Mounana mine, Gabon; corresponds to Al<sub>1.02</sub>(UO<sub>2</sub>)<sub>2.11</sub>(V<sub>2</sub>O<sub>8</sub>)(OH)·10.48H<sub>2</sub>O.

(2) Al(UO<sub>2</sub>)<sub>2</sub>(V<sub>2</sub>O<sub>8</sub>)(OH)·11H<sub>2</sub>O.

**Occurrence:** In the oxidized zone of a lead-bearing U–V deposit (Mounana mine, Gabon).

**Association:** Metavanuralite, francevillite, curienite, duttonite, chervetite, brackebuschite, mottramite, carnotite, dewindtite, torbernite, uranopilite, johannite, kasolite.

**Distribution:** From the Mounana uranium mine, Franceville, Gabon.

**Name:** For VANadium, URanium, and ALuminum in the composition.

**Type Material:** National School of Mines, Paris, France; The Natural History Museum, London, England.

**References:** (1) Branche, G., P. Bariand, F. Chantret, R. Pouget, and A. Rimsky (1963) La vanuralite, nouveau minéral uranifère. *Compt. Rendus Acad. Sci. Paris*, 256, 5374–5376 (in French). (2) (1963) *Amer. Mineral.*, 48, 1415–1416 (abs. ref. 1). (3) Cesbron, F. (1970) Nouvelles données sur la vanuralite. Existence de la méta-vanuralite. *Bull. Minéral.*, 93, 242–248 (in French with English abs.).