

Curienite

$\text{Pb}(\text{UO}_2)_2(\text{V}_2\text{O}_8) \cdot 5\text{H}_2\text{O}$

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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As a microcrystalline powder.

Physical Properties: Hardness = n.d. $D(\text{meas.}) = 4.88$ $D(\text{calc.}) = 4.94$ Radioactive.

Optical Properties: Semitransparent. *Color:* Canary-yellow.

Optical Class: Biaxial (–) (synthetic). $\alpha = \text{n.d.}$ $\beta = > 2$ $\gamma = > 2$ $2V(\text{meas.}) = 66^\circ$

Cell Data: *Space Group:* $Pcan$ (synthetic). $a = 10.40(4)$ $b = 8.45(3)$ $c = 16.34(4)$
 $Z = 4$

X-ray Powder Pattern: Mounana mine, Gabon.

3.005 (vvs), 8.19 (vvs), 4.10 (vs), 5.13 (s), 4.22 (s), 3.226 (ms), 2.116 (ms)

Chemistry:

	(1)	(2)	(3)
UO_3	53.40	51.50	53.61
V_2O_5	17.32	17.87	17.04
PbO	20.09	20.63	20.91
BaO	0.84		
H_2O	8.30	10.00	8.44
Total	99.95	100.00	100.00

(1) Mounana mine, Gabon; by gravimetric and photometric methods, H_2O by the Penfield method; corresponds to $(\text{Pb}_{0.97}\text{Ba}_{0.06})_{\Sigma=1.03}(\text{UO}_2)_2(\text{V}_{2.04}\text{O}_8) \cdot 4.94\text{H}_2\text{O}$. (2) Abertamy mine, Czech Republic; by electron microprobe, H_2O by microchemical methods.

(3) $\text{Pb}(\text{UO}_2)_2(\text{V}_2\text{O}_8) \cdot 5\text{H}_2\text{O}$.

Polymorphism & Series: Forms a series with francevillite.

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

Association: Francevillite, duttonite, vanuralite, chervetite, mottramite, carnotite, dewindtite, torbernite, uranopilite, johannite, kasolite (Mounana mine, Gabon); sphalerite, galena, uraninite, quartz (Abertamy mine, Czech Republic); mottramite, metatorbernite, zeunerite (Jáchymov, Czech Republic).

Distribution: From the Mounana uranium mine, Franceville, Gabon. In the Abertamy uranium mine, near Jáchymov, and in the Geister vein, Jáchymov (Joachimsthal), Czech Republic. From Akashat, Iraq.

Name: To honor Professor Hubert Curien (1924–), French mineralogist and crystallographer, Laboratory of Mineralogy and Crystallography, University of Pierre and Marie Curie (Sorbonne), Paris, France.

Type Material: University of Pierre and Marie Curie, Paris; National School of Mines, Paris, France.

References: (1) Cesbron, F. and N. Morin (1968) Une nouvelle espèce minérale: la curiénite. Étude de la série francevillite-curiénite. *Bull. Minéral.*, 91, 453–459 (in French with English abs.). (2) (1969) *Amer. Mineral.*, 54, 1220 (abs. ref. 1). (3) Boréne, J. and F. Cesbron (1971) Structure cristalline de la curiénite $\text{Pb}(\text{UO}_2)_2(\text{VO}_4)_2 \cdot 5\text{H}_2\text{O}$. *Bull. Minéral.*, 94, 8–14 (in French with English abs.). (4) Pauliš, P. (1992) Curienite from Abertamy near Jachymov, Western Bohemia, Czechoslovakia. *Časopis pro Mineralogii a Geologii*, 37(1), 55–56 (in Czech with English abs.).