Compreignacite $K_2(UO_2)_6O_4(OH)_6 \cdot 8H_2O$

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$ or $mm2$. As tabular crystals, to several tenths of one mm, flattened on [001], with large {001} and {010}, modified by {130}, {102}, {110}, {104}, and {118}; as intergrowths of crystals and spherules. *Twinning:* Commonly on {110}, as simple contact or multiple cyclic twins.

Physical Properties: *Cleavage:* Perfect on {001}. *Tenacity:* Brittle. Hardness = n.d. D(meas.) = 5.03(5) D(calc.) = 5.13(5)

Optical Properties: Transparent to translucent. *Color:* Bright yellow to golden yellow. *Streak:* Pale yellow.
Optical Class: Biaxial (–). *Pleochroism:* Intense; X = colorless; $Y = Z$ = yellow. *Orientation:* $X = c$; $Y = a$; $Z = b$. $\alpha = [< 1.790]$ $\beta = 1.798$ $\gamma = 1.802$ 2V(meas.) = 10°–15°

Cell Data: *Space Group:* $Pnmn$ or $Pn2_1n$. $a = 7.16(2)$ $b = 12.16(5)$ $c = 14.88(5)$ Z = 2

X-ray Powder Pattern: Margnac mine, France.
7.40 (FFF), 3.53 (FF), 3.19 (FF), 3.70 (F), 3.58 (F), 3.34 (F), 2.554 (F)

Chemistry:

	(1)	(2)
UO_3	88.8	85.44
K_2O	5.4	4.69
H_2O	[9.9]	9.87
Total	[104.1]	100.00

(1) Margnac mine, France; by electron microprobe, original analysis U 82.0%, K 4.5% after heating material to 450 °C; here converted to oxides, H_2O from theoretical analysis.
(2) $K_2(UO_2)_6O_4(OH)_6 \cdot 8H_2O$.

Occurrence: As a very rare oxidation product of "pitchblende" in uranium deposits.

Association: Uraninite, cuprosklodowskite, uranophane, zeunerite, schoepite, brochantite, connellite, cerian agardite (Margnac mine, France); cuprosklodowskite, uranophane, brochantite, connellite, calcite, chalcopyrite, siderite, uraninite, potassian feldspar (Wheal Edward, Cornwall, England).

Distribution: In France, from the Margnac mine, Compreignac, Haute-Vienne. From Wheal Owles and Wheal Edward, St. Just, Cornwall, England. From Jáchymov (Joachimsthal), Czech Republic. In the Val Masino, Lombardy, Italy. At Shinkolobwe, Katanga Province, Congo (Shaba Province, Zaire). From White Canyon, near Moab, Grand Co., Utah; in the Marshall Pass district, Saguache Co., Colorado; at the Palermo mine, near North Groton, Grafton Co., New Hampshire, USA.

Name: For Compreignac, the village near the Margnac mine, France.

Type Material: University of Pierre and Marie Curie, Paris; National School of Mines, Paris, France; National Museum of Natural History, Washington, D.C., USA, 165183.

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