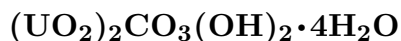


Oswaldpeetersite

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Crystal Data: Monoclinic. *Point Group:* $2/m$. Acicular crystals, showing {100}, {010}, {001}, heavily striated lengthwise, to 0.1 mm, in subparallel radiating groups.

Physical Properties: *Cleavage:* Parallel elongation. *Fracture:* Uneven. *Tenacity:* "Weak". Hardness = 2–3 D(meas.) = > 4.10. D(calc.) = 4.54 Radioactive.

Optical Properties: Transparent. *Color:* Canary-yellow. *Streak:* Pale yellow. *Luster:* Vitreous.

Optical Class: Biaxial (-). *Pleochroism:* $X = Y$ = very pale yellow to colorless; Z = pale yellow. *Orientation:* $Z = a$; positive elongation. $\alpha = 1.583(2)$ $\beta = 1.669(2)$ $\gamma = 1.712(2)$ $2V(\text{meas.}) = \text{n.d.}$ $2V(\text{calc.}) = 67.4(2)^\circ$

Cell Data: *Space Group:* $P2_1/c$. $a = 4.1425(6)$ $b = 14.098(3)$ $c = 18.374(5)$ $\beta = 103.62(1)^\circ$ $Z = 4$

X-ray Powder Pattern: Jomac mine, Utah, USA.

3.32 (100), 4.55 (96), 3.029 (85), 8.95 (65), 7.54 (63), 3.46 (62), 2.273 (62)

Chemistry:

	(1)	(2)
CO ₂	[6.23]	6.23
UO ₃	81.47	81.01
H ₂ O	12.30	12.76
Total	[100.00]	100.00

(1) Jomac mine, Utah, USA; by electron microprobe, H₂O by TGA, CO₂ by difference, presence of (CO₃)²⁻, (OH)¹⁻, and H₂O confirmed by IR; corresponds to (UO₂)_{2.03}(CO₃)_{1.01}(OH)_{2.05}•3.85H₂O. (2) (UO₂)₂CO₃(OH)₂•4H₂O.

Occurrence: In a sedimentary Colorado-Plateau-type U–V deposit.

Association: Gypsum, cuprite, antlerite, goethite, lepidocrocite, mbobomkulite, hydrombobomkulite, sklodowskite.

Distribution: From the Jomac uranium mine, Brown's Rim, White Canyon district, San Juan Co., Utah, USA.

Name: To honor Maurice Oswald Peeters (1945–), Catholic University of Leuven, Leuven, Belgium, structural crystallographer who has done research in uranium mineralogy.

Type Material: Royal Belgian Institute of Natural Sciences, Brussels, Belgium, RC5166.

References: (1) Vochten, R., M. Deliens, and O. Medenbach (2001) Oswaldpeetersite, (UO₂)₂CO₃(OH)₂•4H₂O, a new basic uranyl carbonate mineral from the Jomac uranium mine, San Juan County, Utah, U.S.A. *Can. Mineral.*, 39, 1685–1689. (2) (2003) *Amer. Mineral.*, 88, 252 (abs. ref. 1).