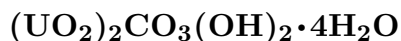


**Oswaldpeetersite**

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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 <sub>2</sub>	[6.23]	6.23
UO <sub>3</sub>	81.47	81.01
H <sub>2</sub> O	12.30	12.76
Total	[100.00]	100.00

(1) Jomac mine, Utah, USA; by electron microprobe, H<sub>2</sub>O by TGA, CO<sub>2</sub> by difference, presence of (CO<sub>3</sub>)<sup>2-</sup>, (OH)<sup>1-</sup>, and H<sub>2</sub>O confirmed by IR; corresponds to (UO<sub>2</sub>)<sub>2.03</sub>(CO<sub>3</sub>)<sub>1.01</sub>(OH)<sub>2.05</sub>•3.85H<sub>2</sub>O. (2) (UO<sub>2</sub>)<sub>2</sub>CO<sub>3</sub>(OH)<sub>2</sub>•4H<sub>2</sub>O.

**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, (UO<sub>2</sub>)<sub>2</sub>CO<sub>3</sub>(OH)<sub>2</sub>•4H<sub>2</sub>O, 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).