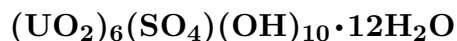


# Uranopilite



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**Crystal Data:** Monoclinic. *Point Group:* n.d. As needles and laths, elongated along [001] and flattened on {010}, to 0.5 mm; in rosettes and fibrous velvety incrustations, also as warty, globular, and reniform masses; commonly in efflorescences and coatings.

**Physical Properties:** *Cleavage:* On {010}, perfect. Hardness = "Soft".  $D(\text{meas.}) = 3.7\text{--}4.0$   $D(\text{calc.}) = [3.74]$  Radioactive; strong lemon-yellow or yellow-green fluorescence under SW and LW UV.

**Optical Properties:** Semitransparent. *Color:* Bright yellow, lemon-yellow, golden yellow, straw-yellow; colorless to pale yellow in transmitted light. *Luster:* Silky. *Optical Class:* Biaxial (+). *Pleochroism:*  $X = \text{colorless}$ ;  $Y = Z = \text{yellow}$ . *Orientation:*  $X \simeq b$ ;  $Y \wedge c = 17^\circ\text{--}23^\circ$ . *Dispersion:*  $r < v$ , very strong, also  $r > v$ .  $\alpha = 1.621\text{--}1.623$   $\beta = 1.623\text{--}1.625$   $\gamma = 1.631\text{--}1.634$   $2V(\text{meas.}) = \text{Large}$ .

**Cell Data:** *Space Group:* n.d.  $a = 14.03(1)$   $b = 14.60(1)$   $c = 9.184(6)$   $\beta = 96.87(6)^\circ$   $Z = 2$

**X-ray Powder Pattern:** Wheal Owles, England.  
7.12 (10), 9.18 (8), 4.28 (8), 3.65 (5), 5.51 (4), 3.31 (4), 2.99 (3)

Chemistry:	(1)	(2)
SO <sub>3</sub>	4.04	3.81
UO <sub>3</sub>	81.20	81.62
CaO	0.93	
H <sub>2</sub> O	14.03	14.57
Total	100.20	100.00

(1) Jáchymov, Czech Republic. (2) (UO<sub>2</sub>)<sub>6</sub>(SO<sub>4</sub>)(OH)<sub>10</sub> · 12H<sub>2</sub>O.

**Occurrence:** A locally abundant secondary mineral formed under acid conditions by the oxidation of sulfides in the presence of uraninite; may be of post-mining origin.

**Association:** Uraninite, zippeite, johannite, uranophane, soddyite, fourmarierite, gypsum.

**Distribution:** From Jáchymov (Joachimsthal) and Příbram, Czech Republic. At Johanngeorgenstadt, Saxony, Germany. In France, from the Mas-d'Alary uranium deposit, three km south-southeast of Lodève, Hérault, at La Crouzille, Haute-Vienne, and from Grury, Saône-et-Loire, France. In Wheal Owles, Wheal Edward, and the Geevor mine, St. Just, Cornwall, England. From Nowa Ruda, Lower Silesia, Poland. In the Urgeiriça mine, Viseu district, Portugal. At Shinkolobwe, Katanga Province, Congo (Shaba Province, Zaire). In the Mounana uranium mine, Franceville, Gabon. From South Alligator Valley, Northern Territory, Australia. In Japan, in the Togo mine, Tottori Prefecture. In the USA, found at many localities in the Uravan district, Montrose Co., Colorado; also at the Happy Jack and Jomac mines, White Canyon district, San Juan Co., and at Capitol Wash, Wayne Co., Utah. In Canada, from Great Bear Lake and Hottah Lake, Northwest Territories, and at Goldfields, Saskatchewan.

**Name:** From its content of URANIUM and the Greek for *felt*, for its texture.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 581–582. (2) Frondel, C. (1958) Systematic mineralogy of uranium and thorium. U.S. Geol. Sur. Bull. 1064, 135–140. (3) Ondruš, P., F. Veselovský, J. Hloušek, R. Skála, I. Vavřín, J. Frýda, J. Čejka, and A. Gabašová (1997) Secondary minerals of the Jáchymov (Joachimsthal) ore district. J. Czech Geol. Soc., 42(4), 3–76, esp. 51–52.