Ianthinite $UO_2 \cdot 5UO_3 \cdot 10H_2O$

Crystal Data: Orthorhombic. *Point Group:* n.d. As plates or laths flattened on {001} and elongated along [010], also acicular or prismatic, to 2 mm. As veins or rosettes of acicular crystals; in crusts and aggregates.

Physical Properties: *Cleavage:* {001}, perfect; {100}, good. *Fracture:* Conchoidal. *Tenacity:* Flexible lamellae. Hardness = 2–3 D(meas.) = 5.16(5) D(calc.) = [5.00] Radioactive; transforms immediately to schoepite on exposure to air.

Optical Properties: Transparent to translucent. *Color:* Violet-black; on exposure to air, turns violet-brown, pale brown, then greenish yellow or yellow; dark violet in transmitted light. *Streak:* Dull violet-brown. *Luster:* Vitreous to submetallic.
Optical Class: Biaxial (–). *Pleochroism:* Strong; X = colorless; Y = violet; Z = dark violet. *Orientation:* $X = c$; $Y = b$; $Z = a$. $\alpha = 1.674(3)$ $\beta = 1.90(2)$ $\gamma = 1.92(2)$ 2V(meas.) = Small.

Cell Data: *Space Group:* n.d. $a = 11.52(5)$ $b = 7.15(2)$ $c = 30.3(1)$ Z = 4

X-ray Powder Pattern: Shinkolobwe, Congo.
7.63 (FF), 3.81 (m), 3.24 (m), 3.59 (fm), 3.35 (fm), 2.61 (f), 2.53 (f)

Chemistry:

	(1)	(2)
$UO_{2.84}$	90.10	
UO_3		76.06
UO_2		14.36
H_2O	[9.90]	9.58
Total	[100.00]	100.00

(1) Shinkolobwe, Congo; H_2O by difference, corresponds to $UO_2 \cdot 5UO_3 \cdot 10.56H_2O$.
(2) $UO_2 \cdot 5UO_3 \cdot 10H_2O$.

Occurrence: A rare secondary mineral in the unoxidized portions of uranium deposits.

Association: Uraninite, schoepite, becquerelite, kasolite, parsonsite, dewindtite, fourmarierite.

Distribution: From Shinkolobwe, Katanga Province, Congo (Shaba Province, Zaire). In the Marshall Pass district, Gunnison and Saguache Co., Colorado, and in the Lucky Strike mine, La Sal Mountains, San Juan Co., Utah, USA. From Wölsendorf, Bavaria, and Menzenschwand, Black Forest, Germany. At Sabugal, Portugal. In France, from La Crouzille, Haute-Vienne; Bigay, and Les Bois Noirs, Puy-de-Dôme; Limouzat-St. Priest-la-Prugne, Loire; Les Brosses, near Grury, Saône-et-Loire; and in the Rabéjac uranium deposit, seven km south-southeast of Lodève, Hérault.

Name: From the Greek for *violet*, in allusion to its color when fresh.

Type Material: n.d.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 633–634. (2) Frondel, C. (1958) Systematic mineralogy of uranium and thorium. U.S. Geol. Sur. Bull. 1064, 56–60. (3) Guillemin, C. and J. Protas (1959) Ianthinite et wyartite. Bull. Soc. fr. Minéral., 82, 80–86.