

**Crystal Data:** Monoclinic. *Point Group:* 2/m, 2, or m. As irregular grains to 3 mm, intergrown within aggregates of skippenite.

**Physical Properties:** *Fracture:* Conchoidal. Hardness = n.d. VHN = 155–186, 166 average (25 g load). D(meas.) = n.d. D(calc.) = 7.82

**Optical Properties:** Opaque. *Color:* Black on a fresh fracture; white with a bluish tint in reflected light. *Luster:* Metallic. *Anisotropism:* Moderate, in blue-gray to dark grayish brown. R<sub>1</sub>–R<sub>2</sub>: (400) —, (420) 46.0–46.6, (440) 46.7–47.2, (460) 47.3–47.6, (480) 47.7–48.0, (500) 47.9–48.3, (520) 48.1–48.5, (540) 48.0–48.6, (560) 47.8–48.7, (580) 47.8–48.8, (600) 47.9–48.8, (620) 47.9–48.9, (640) 48.0–48.9, (660) 48.0–49.0, (680) 47.9–49.0, (700) 47.9–49.0

**Cell Data:** *Space Group:* P2/m, P2, or Pm. a = 12.921(3) b = 3.997(1) c = 14.989(3) β = 109.2(2)° Z = 2

**X-ray Powder Pattern:** Otish Mountains deposit, Canada. 2.976 (10), 2.929 (10), 3.573 (9b), 2.407 (7), 2.140 (7b), 2.065 (7b), 1.484 (7)

**Chemistry:**

	(1)
Cu	8.06 – 9.16
Pb	14.03 – 16.39
Bi	42.69 – 46.44
Se	27.44 – 28.73
Te	0.19 – 0.53
S	3.03 – 3.47
<hr/>	
Total	

(1) Otish Mountains deposit, Canada; by electron microprobe, ranges of 11 grains, the average of which corresponds to Cu<sub>2.36</sub>Pb<sub>1.26</sub>Bi<sub>3.70</sub>(Se<sub>6.21</sub>S<sub>1.74</sub>Te<sub>0.05</sub>)<sub>Σ=8.00</sub>.

**Occurrence:** In a vein-type uranium deposit with other tellurides and selenides.

**Association:** Skippenite, součekite, clausthalite, chalcopyrite, Au–Ag alloy.

**Distribution:** From the Otish Mountains uranium deposit, Quebec, Canada.

**Name:** For Professor David H. Watkinson, Carleton University, Ottawa, Canada.

**Type Material:** n.d.

**References:** (1) Johan, Z., P. Picot, and F. Ruhlmann (1987) The ore mineralogy of the Otish Mountains uranium deposit, Quebec: skippenite, Bi<sub>2</sub>Se<sub>2</sub>Te, and watkinsonite, Cu<sub>2</sub>PbBi<sub>4</sub>(Se,S)<sub>8</sub>, two new mineral species. Can. Mineral., 25, 625–637. (2) (1989) Amer. Mineral., 74, 948 (abs. ref. 1).