

Crystal Data: Tetragonal. *Point Group:* $\bar{4}2m$, $4mm$, or $4/m\ 2/m\ 2/m$. Minute crystals, up to 2 mm, and crystalline, embedded in other selenides; massive.

Physical Properties: *Cleavage:* Good on {001}, imperfect on {100}. Hardness = 2 VHN = 64 (20 g load). D(meas.) = n.d. D(calc.) = 7.40

Optical Properties: Opaque. *Color:* Gray-brown. *Luster:* Metallic. *Pleochroism:* Weak, creamy gray to gray.

R₁–R₂: (400) 23.5–28.3, (420) 24.7–29.0, (440) 25.7–29.7, (460) 26.5–30.5, (480) 26.6–30.6, (500) 27.0–30.7, (520) 27.1–30.6, (540) 26.6–29.9, (560) 26.5–29.4, (580) 26.1–28.8, (600) 26.0–28.8, (620) 26.1–28.8, (640) 26.7–29.1, (660) 27.9–29.7, (680) 28.7–30.3, (700) 29.9–31.3

Cell Data: *Space Group:* $I\bar{4}2m$, $I4mm$ or $I4/mmm$. $a = 3.976(5)$ $c = 13.70(2)$ $Z = 1$

X-ray Powder Pattern: Bukov, Czech Republic.

2.998 (100), 2.600 (90), 1.771 (80), 2.255 (70), 1.987 (70), 1.656 (60), 3.428 (50)

Chemistry:

	(1)	(2)
Tl	42.3	42.1
Cu	21.8	20.3
Fe	6.0	6.0
Se	30.7	31.0
Total	100.8	99.4

(1) Předbořice, Czech Republic; by electron microprobe, corresponding to Tl_{1.98}Cu_{3.28}Fe_{1.02}Se_{3.72}.

(2) Bukov, Czech Republic; by electron microprobe; corresponding to Tl_{2.01}Cu_{3.12}Fe_{1.04}Se_{3.83}.

Occurrence: In selenium-bearing veins of hydrothermal origin.

Association: Clausthalite, eskebornite, eucairite, chaméanite, umangite, berzelianite, hakite, klockmannite, sabatierite, crookesite, ferroselite, cadmoselite, pyrite, marcasite, chalcopyrite, chalcocite, bornite, uraninite, hematite, goethite, calcite, dolomite, quartz.

Distribution: In the Czech Republic, from Bukov [TL], near Tisnova; in the Petrovice uranium deposit, near Ždár; and the Předbořice uranium deposit, near Krásna Hora. At Skrikerum, near Tryserum, Kalmar, Sweden. In the Chaméane uranium mine, near Vernet-la-Varenne, Puy-de-Dôme, France. At Tuminico, Sierra de Cacho, La Rioja Province, Argentina.

Name: For its occurrence at Bukov, Czech Republic.

Type Material: National School of Mines, Paris, France; Charles University, Prague, Czech Republic.

References: (1) Johan, Z. and M. Kvaček (1971) La bukovite, Cu_{3+x}Tl₂FeSe_{4-x}, une nouvelle espèce minérale. Bull. Soc. fr. Minéral., 94, 529–533 (in French with English abs.). (2) (1972) Amer. Mineral., 57, 1910 (abs. ref. 1). (3) Zemann, J. (1974) Structure type of bukovite. Anz. Oesterr. Akad. Wiss. Math.–Naturwiss. Kl., 110, 126–129 (in German). (4) (1976) Chem. Abs., 84, 20303 (abs. ref. 3). (5) Makovicky, E., Z. Johan, and S. Karup-Møeller (1980) New data on bukovite, thalcusite, chalcotallite and rohaite. Neues Jahrb. Mineral., Abh., 138, 122–146.