Petrovicite $PbHgCu_3BiSe_5$

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$ or $mm2$. Crystals are tabular, to a few tenths of one mm.

Physical Properties: *Cleavage:* Imperfect, parallel to flattening of crystals. Hardness = ∼3 VHN = 102 (25 g load). D(meas.) = n.d. D(calc.) = 7.707

Optical Properties: Opaque. *Color:* In polished section, cream colored. *Luster:* Strong metallic. *Anisotropism:* Weak; dark green and violet.

R_1–R_2: (400) 44.0–44.4, (420) 44.1–44.8, (440) 44.2–45.2, (460) 44.3–45.4, (480) 44.4–45.7, (500) 44.7–46.1, (520) 45.1–46.3, (540) 45.2–46.5, (560) 45.2–46.4, (580) 45.1–46.2, (600) 45.1–46.0, (620) 45.0–45.9, (640) 44.9–45.8, (660) 44.9–45.7, (680) 44.8–45.6, (700) 44.8–45.5

Cell Data: *Space Group:* $Pnam$ or $Pna2_1$. $a = 16.176(5)$ $b = 14.684(5)$ $c = 4.331(3)$ $Z = 4$

X-ray Powder Pattern: Petrovice deposit, Czech Republic.
3.120 (100), 2.961 (100), 3.546 (80), 3.186 (80), 3.621 (70), 2.720 (50), 2.262 (50)

Chemistry:

	(1)	(2)	(3)
Pb	16.7	17.3	17.24
Hg	17.4	17.9	16.69
Cu	16.0	15.3	15.85
Bi	16.6	17.4	17.38
Se	34.4	32.6	32.84
Total	101.1	100.5	100.00

(1) Petrovice deposit, Czech Republic; by electron microprobe, corresponding to $Pb_{0.95}Hg_{1.02}Cu_{2.97}Bi_{0.93}Se_{5.13}$. (2) Do.; corresponding to $Pb_{1.01}Hg_{1.08}Cu_{2.91}Bi_{1.01}Se_{4.99}$. (3) $PbHgCu_3BiSe_5$.

Occurrence: In hydrothermal dolomite-calcite veins with other selenides.

Association: Berzelianite, eucairite, crookesite, tyrrellite, ferroselite, bukovite, kruťaite, athabascaite, umangite, eskebornite, calcite, dolomite.

Distribution: From the Petrovice uranium deposit, near Ždár, Czech Republic [TL].

Name: For its occurrence in the Petrovice deposit, Czech Republic.

Type Material: National School of Mines, Paris, France.

References: (1) Johan, Z., M. Kvaček, and P. Picot (1976) La petrovicite, $Cu_3HgPbBiSe_5$, un nouveau minéral (in French with English abs.). Bull. Soc. fr. Minéral., 99, 310–313. (2) (1977) Amer. Mineral., 62, 594–595 (abs. ref. 1).