

**Crystal Data:** Tetragonal. *Point Group:*  $4/m\ 2/m\ 2/m$ . In irregular polyminerallic intergrowths, to 4 mm.

**Physical Properties:** *Cleavage:* Perfect in one direction. Hardness = n.d. VHN = 47–68 (10 g load). D(meas.) = n.d. D(calc.) = 9.66

**Optical Properties:** Opaque. *Color:* Grayish white in reflected light. *Pleochroism:* Weak to none. *Anisotropism:* Slight.

R<sub>1</sub>–R<sub>2</sub>: (400) —, (420) —, (440) 48.7–50.5, (460) 53.2–54.9, (480) 54.6–53.8, (500) 54.1–53.3, (520) 54.8–53.7, (540) 55.2–54.0, (560) 56.2–54.9, (580) 56.7–55.2, (600) 57.0–56.1, (620) 58.3–56.8, (640) 59.2–57.8, (660) 60.1–58.6, (680) 60.9–59.6, (700) 61.3–59.6

**Cell Data:** *Space Group:*  $I/4mmm$ .  $a = 3.3628(16)$   $c = 12.902(11)$   $Z = 2$

**X-ray Powder Pattern:** Majak mine, Russia.  
2.643 (100), 2.372 (80), 1.420 (70), 1.111 (70), 1.166 (60), 2.043 (50), 1.685 (50)

<b>Chemistry:</b>	(1)
	Pd 20.5
	Bi 64.6
	Pb 15.3
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	Total 100.4

(1) Majak mine, Russia; by electron microprobe, corresponding to Pd<sub>1.00</sub>(Bi<sub>1.61</sub>Pb<sub>0.38</sub>)<sub>Σ=1.99</sub>.

**Occurrence:** In massive zoned Cu–Ni sulfide ores (Talnakh area, Russia).

**Association:** Froodite, sobolevskite, paolovite, cabriite, silver, hibbingite, altaite, galena, pentlandite, cubanite, chalcopyrite (Talnakh area, Russia).

**Distribution:** From the Majak mine, Talnakh area, Noril'sk region, western Siberia, Russia [TL]. From Tilkerode, Harz Mountains, Germany.

**Name:** Honors Professor Nikolai Nikolaevich Urvantsev (1893–1985), of St. Petersburg, Russia, one of the discoverers of the Noril'sk deposits.

**Type Material:** Mining Institute, St. Petersburg, Russia, 1176/1.

**References:** (1) Rudashevskii, N.S., V.N. Makarov, E.M. Mededeva, V.V. Ballakh, Y.I. Permyakov, G.A. Mitenkov, A.M. Karpenkov, I.A. Bud'ko, and N.N. Shishkin (1976) Urvantsevite, Pd(Bi,Pb)<sub>2</sub>, a new mineral in the system Pd–Bi–Pb. *Zap. Vses. Mineral. Obshch.*, 105, 704–709 (in Russian). (2) (1977) *Amer. Mineral.*, 62, 1260–1261 (abs. ref. 1). (3) Bayliss, P. (1990) Revised unit-cell dimensions, space group, and chemical formula of some metallic minerals. *Can. Mineral.*, 28, 751–755. (4) Cabri, L.J., Ed. (1981) *Platinum group elements: mineralogy, geology, recovery*. *Can. Inst. Min. & Met.*, 145–146.