Borishanskiite $Pd_{1+x}(As,Pb)_2$ (x = 0 to 0.2)

Crystal Data: Orthorhombic. *Point Group:* $mm2$. Typically as grains, to 150 μm, enclosed in sulfides.

Physical Properties: *Cleavage:* Three directions observed. *Tenacity:* Brittle. Hardness = n.d. VHN = 241 (20 g load). D(meas.) = n.d. D(calc.) = 10.2

Optical Properties: Opaque. *Color:* Dark steel-gray; pale gray in polished section. *Luster:* Metallic. *Anisotropism:* Barely noticeable to moderate, in yellowish gray tones. R_1–R_2: (430) 51.6–53.2, (460) 54.1–54.6, (490) 55.8–56.2, (520) 56.0–56.4, (550) 56.6–57.0, (580) 57.3–57.8, (610) 58.3–58.7, (640) 59.3–59.8, (670) 60.1–60.6, (700) 61.2–61.7

Cell Data: *Space Group:* $Ccm2_1$. $a = 7.18(2)$ $b = 8.62(2)$ $c = 10.66(2)$ $Z = 16$

X-ray Powder Pattern: Noril'sk region, Russia.
2.65 (100), 2.16 (90), 2.50 (60), 2.25 (60), 1.677 (60), 1.385 (60), 1.169 (60)

Chemistry:

	(1)	(2)
Pd	29.8	31.4
Ag		1.1
Pb	50.4	50.2
As	21.4	19.8
Total	101.6	102.5

(1–2) Talnakh area, Russia; by electron microprobe, corresponding to $Pd_{1.06}(As_{1.08}Pb_{0.92})_{\Sigma=2.00}$ and $(Pd_{1.16}Ag_{0.04})_{\Sigma=1.20}(As_{1.04}Pb_{0.96})_{\Sigma=2.00}$.

Occurrence: In massive and disseminated Cu–Ni sulfide ores.

Association: Nickeline, palladian cuproauride, pentlandite, cubanite, chalcopyrite, magnetite, pyrrhotite, zvyagintsevite, atokite.

Distribution: From Russia, in the Oktyabr mine, Talnakh area, Noril'sk region, western Siberia [TL].

Name: To honor Serafima Samoylovna Borishanskaya (1907–1988), Russian mineralogist, Moscow University, Moscow, Russia.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia.

References: (1) Razin, L.V., L.S. Dubakina, V.I. Meschankina, and V.D. Begizov (1975) Borishanskiite – a new plumboarsenide of palladium from the copper-nickel sulfide ores of the Talnakh differentiated intrusive. Zap. Vses. Mineral. Obshch., 104, 57–61 (in Russian). (2) (1976) Amer. Mineral., 61, 502 (abs. ref. 1).