Nipalarsite $Ni_8Pd_3As_4$

Crystal Data: Cubic. *Point Group*: $4/m\,\bar{3}\,2/m$. As anhedral grains to 80 μm in complex polymineralic PGM intergrowths on pentlandite.

Physical Properties: *Cleavage*: n.d. *Tenacity*: Brittle. *Fracture*: n.d. Hardness = ~4
VHN = 400.5-449.2, 429.9 average (20 g load). D(meas.) = n.d. D(calc.) = 9.60

Optical Properties: Opaque. *Color*: Light gray with a blue tinge in reflected light, a lilac tint against sperrylite. *Streak*: Gray. *Luster*: Metallic.
Optical Class: n.d.
R: (470) 46.06, (546) 48.74, (589) 50.64, (650) 54.12

Cell Data: *Space Group: $Fm\bar{3}\,m$*. a = 11.4428(9) Z = 8

X-Ray Diffraction Pattern: Synthetic $Ni_8Pd_3As_4$.
2.021 (100), 2.201 (35), 2.334 (11), 2.859 (10), 1.906 (8), 1.429 (7), 2.623 (6)

Chemistry:

	(1)
Ni	44.01
Pd	28.74
Fe	0.32
Cu	0.85
Pt	0.01
Au	0.05
As	25.42
Sb	0.05
Te	0.39
Total	99.85

(1) Monchetundra layered intrusion, Kola Peninsula, Russia; average electron microprobe analysis; corresponds to $(Ni_{8.10}Fe_{0.06})_{\Sigma=8.16}(Pd_{2.94}Cu_{0.18})_{\Sigma=3.12}(As_{3.68}Te_{0.03})_{\Sigma=3.71}$.

Mineral Group: Platinum group mineral.

Occurrence: In sulfide-bearing, intercumulus orthopyroxenite of a layered ultramafic intrusion.

Association: Sperrylite, kotulskite, hollingworthite, isomertieite, menshikovite, palarstanide, nielsenite, monchetundtraite, pentlandite, anthophyllite, actinolite, chlorite.

Distribution: From the Monchetundra layered intrusion (borehole 1819, depth 101.4 m), Kola Peninsula, Russia.

Name: Derived from the names of the essential components: *ni*ckel, *pal*adium and *ar*senic.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (5236/1).

References: (1) Grokhovskaya, T.L., O.V. Karimova, A. Vymazalová, F. Laufek, D.A. Chareev, E.V. Kovalchuk, L.O. Magazina, and V.A. Rassulov (2019) Nipalarsite, $Ni_8Pd_3As_4$, a new platinum-group mineral from the Monchetundra Intrusion, Kola Peninsula, Russia. Mineral. Mag., 83, 837-845.