

Crystal Data: Hexagonal. *Point Group:* n.d. As rounded or oval inclusions, to 100 μm , in polarite and as intergrowths with stannopalladinite and isomertieite.

Physical Properties: Hardness = ~ 5 VHN = 520 (50 g load). D(meas.) = 9.33 (synthetic). D(calc.) = 10.5

Optical Properties: Opaque. *Color:* Grayish white in reflected light. *Anisotropism:* Weak. R_1 – R_2 : (400) —, (420) —, (440) 47.4, (460) 49.0, (480) 50.5, (500) 51.2, (520) 52.3, (540) 52.8, (560) 54.4, (580) 55.2, (600) 55.8, (620) 56.1, (640) 56.7, (660) 58.0, (680) 57.9, (700) 58.5

Cell Data: *Space Group:* n.d. $a = 6.066$ $c = 7.20$ $Z = 6$

X-ray Powder Pattern: Majak mine, Russia.

2.65 (10), 1.988 (10), 2.19 (7), 2.30 (5), 3.04 (4), 2.40 (4), 1.800 (4b)

Chemistry:

	(1)	(2)	(3)
Pd	41.2	45.01	44.33
Pt		0.18	
Fe		0.06	
Ni	27.2	23.33	24.46
As	31.0	30.85	31.21
Sb		0.58	
Te		0.14	
Total	99.4	100.15	100.00

(1) Majak mine, Russia; by electron microprobe, average of two analyses; corresponding to $\text{Pd}_{0.94}\text{Ni}_{1.12}\text{As}_{1.00}$. (2) Konttijärvi intrusion, Finland; by electron microprobe, corresponding to $\text{Pd}_{1.02}\text{Ni}_{0.95}(\text{As}_{0.99}\text{Sb}_{0.01})_{\Sigma=1.00}$. (3) PdNiAs.

Occurrence: As intergrowths with other platinum-group minerals in chalcopyrite and talnakhite ores (Majak mine, Russia); in sulfide mineralization in a strongly metamorphosed layered intrusive (Konttijärvi intrusion, Finland).

Association: Chalcopyrite, talnakhite, polarite, stanopalladinite, silver, ferroplatinum, sperrylite, other platinum-group minerals (Majak mine, Russia); isomertieite, mertieite (Konttijärvi intrusion, Finland).

Distribution: In Russia, from the Majak mine, Talnakh area, Noril'sk region, western Siberia [TL]; also found at the Chiney layered intrusion, western Aldan shield, Siberia; near Nizhni Tagil, Ural Mountains; and in the Vostok deposit, Lukkulaivaara layered intrusion, Karelia. From the Konttijärvi intrusion, northern Finland. At the Lubin and Polkovice copper mines, near Legnica, Zechstein copper district, Lower Silesia, Poland.

Name: For the Majak (Mayak) mine, Russia.

Type Material: Institute of Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia.

References: (1) Genkin, A.D., T.L. Evstigneeva, N.V. Troneva, and L.N. Vyal'sov (1976) Majakite, PdNiAs, a new mineral from copper-nickel sulfide ores. *Zap. Vses. Mineral. Obshch.*, 105, 698–703 (in Russian). (2) (1977) *Amer. Mineral.*, 62, 1260 (abs. ref. 1). (3) Vuorelainen, Y., T.A. Häkli, E. Hänninen, H. Papunen, J. Reino, and R. Törnroos (1982) Isomertieite and other platinum-group minerals from the Konttijärvi layered mafic intrusion, northern Finland. *Econ. Geol.*, 77, 1511–1518.