

Crystal Data: Hexagonal. *Point Group:* $\bar{6} 2m$. As irregular grains to 39 μm .

Physical Properties: *Cleavage:* None. *Fracture:* n.d. *Tenacity:* n.d. *Hardness:* = n.d.
D(meas.) = n.d. D(calc.) = 9.718-9.753

Optical Properties: Opaque. *Color:* Bright creamy white in reflected light. *Streak:* n.d.
Luster: Metallic.

Optical Class: n.d. Weakly bireflectant. *Anisotropism:* Weak, shades of blue and olive green.
R₁-R₂: (470) 49.6-52.7 (36.3-38.6)_{oil}, (546) 51.2-53.8 (27.6-39.5)_{oil}, (589) 51.6-53.7 (37.8-39.5)_{oil},
(650) 51.7-53.3 (37.9-39.3)_{oil} (UG-2 deposit)

Cell Data: *Space Group:* $P\bar{6} 2m$. $a = 6.496(5)$ $c = 3.433(4)$ $Z = 3$ (calculated.)

X-ray Powder Pattern: Calculated pattern.

2.3658 (100), 2.1263 (37), 2.1808 (34), 3.240 (20), 1.8752 (19), 1.7265 (12), 1.3403 (11)

Chemistry:	(1)	(2)
Si	7.95	10.13
Pd	68.56	68.77
Ag	1.07	0.33
Ni	4.59	5.16
Te	0.32	n.d.
Sb	0.36	0.11
As	3.95	2.18
Fe	0.64	0.35
Pt	1.72	4.45
Sn	1.79	3.08
Cu	2.18	1.62
Rh	2.39	3.76
Total	95.53	99.94

(1) Kapalagulu Intrusion, western Tanzania; average of 8 electron microprobe analyses; corresponds to (Pd_{1.657}Ni_{0.201}Cu_{0.088}Rh_{0.06}Fe_{0.029}Ag_{0.026}Pt_{0.023}Sn_{0.039}) $\Sigma=2.123$ (Si_{0.728}As_{0.136}Sb_{0.008}Te_{0.006}) $\Sigma=0.878$.

(2) UG-2, Bushveld Complex, South Africa; average of 12 electron microprobe analyses; corresponding to (Pd_{1.557}Ni_{0.212}Cu_{0.061}Rh_{0.088}Fe_{0.015}Ag_{0.007}Pt_{0.055}Sn_{0.063}) $\Sigma=2.058$ (Si_{0.869}As_{0.07}Sb_{0.02}) $\Sigma=0.941$.

Occurrence: In heavy mineral concentrates from layered mafic intrusions.

Association: Chromite, pentlandite, pyrrhotite/troilite, chalcopyrite, magnetite, gudmundite, arsenopyrite, zircon, galena, anglesite.

Distribution: From the (PGE)-chromite horizon, Kapalagulu Intrusion, near the eastern shore of Lake Tanganyika, western Tanzania, and in the UG-2 chromitite, Bushveld Complex, South Africa.

Name: For the mineral's two essential chemical components, palladium and silicon.

Type Material: Canadian Museum of Nature, Gatineau, Québec, Canada (CMNMC 86891).

References: (1) Cabri, L.J., A.M. McDonald, C.J. Stanley, N.S. Rudashevsky, G. Poirier, H.R. Wilhelmij, W. Zhe, and V.N. Rudashevsky (2015) Palladosilicide, Pd₂Si, a new mineral from the Kapalagulu Intrusion, Western Tanzania and the Bushveld Complex, South Africa. *Mineral. Mag.*, 79(2), 295-307. (2) (2016) *Amer. Mineral.*, 101, 2571 (abs. ref. 1).