

Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. As grains, to 0.5 mm; as euhedral inclusions and infilling fractures in iron oxides.

Physical Properties: Hardness = n.d. VHN = 390–437, 414 average (100 g load).
D(meas.) = 8.30 (synthetic). D(calc.) = 8.15

Optical Properties: Opaque. *Color:* In reflected light, white in air, light gray in oil.
R: (400) 42.4, (420) 42.8, (440) 43.3, (460) 43.8, (480) 44.3, (500) 44.8, (520) 45.4, (540) 45.7, (560) 45.8, (580) 45.7, (600) 45.6, (620) 45.6, (640) 45.6, (660) 45.7, (680) 45.8, (700) 46.2

Cell Data: *Space Group:* $Pm\bar{3}m$. $a = 10.635$ $Z = 2$

X-ray Powder Pattern: Itabira district, Brazil.
1.887 (vvs), 2.832 (vs), 2.571 (s), 2.430 (s), 2.040 (s), 1.723 (s)

Chemistry:	(1)	(2)	(3)
Pd	55.77	57.03	60.43
Pt		1.31	
Fe		0.37	
Cu	3.99	3.17	
Hg	1.66	1.45	
Ag		0.33	
Se	38.59	36.66	39.57
S		0.31	
Total	100.01	100.63	100.00

(1) Itabira district, Brazil; by electron microprobe, corresponding to $(Pd_{15.47}Cu_{1.85}Hg_{0.24})_{\Sigma=17.56}Se_{14.44}$. (2) Cauê mine, Itabira district, Brazil; by electron microprobe, average of seven analyses; corresponding to $(Pd_{15.83}Cu_{1.47}Hg_{0.21}Pt_{0.20}Fe_{0.20}Ag_{0.09})_{\Sigma=18.00}(Se_{13.71}S_{0.29})_{\Sigma=14.00}$. (3) Pd₁₇Se₁₅.

Occurrence: Sparingly in residual concentrates from gold washings (Itabira district, Brazil); in specularite and magnetite (Cauê mine, Itabira district, Brazil).

Association: Arsenopalladinite, isomertieite, atheneite (Itabira district, Brazil); palladian gold, isomertieite, sudovikovite (Cauê mine, Itabira district, Brazil).

Distribution: In Brazil, in Minas Gerais, from gold placers in the Itabira district [TL], and at the Cauê iron mine; from the Serra Pelada Au–Pd–Pt deposit, Pará.

Name: For the chemical composition, PALLADIUM and SELENIUM.

Type Material: The Natural History Museum, London, England, 1977,500 and 1934,72; National Museum of Natural History, Washington, D.C., USA, 142504.

References: (1) Davis, R.J., A.M. Clark, and A.J. Criddle (1977) Palladseite, a new mineral from Itabira, Minas Gerais, Brazil. *Mineral. Mag.*, 41, 123. (2) (1977) *Amer. Mineral.*, 62, 1059 (abs. ref. 1). (3) Cabral, A.R., B. Lehmann, R. Kwitko, H.F. Galbiatti, and M.C. Pereira (2002) Palladseite and its oxidation: evidence from Au–Pd vein-type mineralization (jacutinga), Cauê iron-ore mine, Quadrilátero Ferrífero, Minas Gerais, Brazil. *Mineral. Mag.*, 66, 327–336. (4) Geller, S. (1962) The crystal structure of Pd₁₇Se₁₅. *Acta Cryst.*, 15, 713–721.