

**Crystal Data:** Hexagonal. *Point Group:*  $\bar{3}$  or 3. As anhedral grains, to 265  $\mu\text{m}$ .  
*Twinning:* Rarely observed in polished section.

**Physical Properties:** Hardness = n.d. VHN = 384 (50 g load). D(meas.) = n.d.  
D(calc.) = 10.96

**Optical Properties:** Opaque. *Color:* In polished section, pale creamy gray with faint pinkish tint. *Luster:* Metallic. *Anisotropism:* Weak in air, dark gray to brownish gray; in oil, distinct in brownish black with a blue to yellow-brown tinge.

R<sub>1</sub>–R<sub>2</sub>: (470) 51.6–52.7, (546) 52.5–53.2, (589) 53.1–53.7, (650) 54.4–55.0

**Cell Data:** *Space Group:*  $P\bar{3}$  or  $P3$ .  $a = 7.392\text{--}7.399$   $c = 10.311$   $Z = 3$

**X-ray Powder Pattern:** Stillwater complex, Montana, USA.  
2.115 (100), 2.355 (80), 1.351 (50), 0.8858 (40), 2.700 (30), 1.991 (30b), 2.521 (20)

Chemistry:	(1)	(2)	(3)
Pd	79.0	79.13	79.11
Pt		0.40	
Au		0.07	
Ni		0.01	
As	21.2	20.83	20.89
Sb		0.05	
Bi		0.04	
S		0.03	
Total	100.2	[100.56]	100.00

(1) Stillwater complex, Montana, USA; by electron microprobe; corresponds to Pd<sub>7.87</sub>As<sub>3.00</sub>.

(2) Siikakämä intrusion, Finland; by electron microprobe, average of three grains, original total given as 100.58%; corresponds to (Pd<sub>7.97</sub>Pt<sub>0.02</sub>)<sub>Σ=7.99</sub>(As<sub>2.98</sub>S<sub>0.01</sub>)<sub>Σ=2.99</sub>. (3) Pd<sub>8</sub>As<sub>3</sub>.

**Occurrence:** In layered ultramafic igneous bodies.

**Association:** Gold, palladoarsenide, sperrylite, braggite, hollingworthite, chalcopyrite, digenite, pentlandite, pyrrhotite.

**Distribution:** From the Banded and Upper zones of the Stillwater complex, Montana, USA [TL]. In the Roby zone, Lac des Iles complex, Ontario, Canada. At the Siikakämä intrusion, about 50 km southeast of Rovaniemi, northern Finland. From the Lukkulaivaara layered intrusion, Karelia, Russia.

**Name:** For the Stillwater mafic complex, Montana, USA.

**Type Material:** Royal Ontario Museum, Toronto, Canada, M33559; The Natural History Museum, London, England, 1979,129; National Museum of Natural History, Washington, D.C., USA, 132500.

**References:** (1) Cabri, L.J., J.L.G. Laflamme, J.M. Stewart, J.F. Rowland, and Tzong R. Chen (1975) New data on some palladium arsenides and antimonides. *Can. Mineral.*, 13, 321–335. (2) (1977) *Amer. Mineral.*, 62, 1060 (abs. ref. 1). (3) Hänninen, E., R. Törnroos, and S.I. Lahti (1986) Stillwaterite and associated platinum group minerals from the Siikakämä layered mafic intrusion, northern Finland. *Lithos*, 19, 87–93.

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