

Crystal Data: Orthorhombic. *Point Group:* mm2. As anhedral to subhedral grains to 20 μm .

Physical Properties: Cleavage: n.d. *Tenacity:* Brittle. *Fracture:* n.d. Hardness = n.d.
 $D(\text{meas.}) = \text{n.d.}$ $D(\text{calc.}) = 10.06$ (synthetic analogue)

Optical Properties: Opaque. *Color:* Light bluish gray in reflected light. *Streak:* n.d.
Luster: Metallic.

Optical Class: Weakly bireflectant. *Anisotropism:* Weak. Non-pleochroic.
 $R_1-R_2: (470) 50.3-51.4, (546) 48.5-48.9, (589) 47.9-48.6, (650) 47.8-48.7$

Cell Data: *Space Group:* Pca2₁ (synthetic analogue). $a = 6.11511(10)$ $b = 6.12383(10)$
 $c = 6.09667(11)$ $Z = 4$

X-ray Powder Pattern: Synthetic analogue.
 1.843 (100), 2.159 (82), 1.401 (64), 3.054 (47), 3.526 (40), 2.490 (36), 1.367 (35)

Chemistry:	(1)	(2)
Pt	56.85	56.41
Pd	0.02	
Sn	34.03	34.32
S	9.15	9.27
Total	100.05	100.00

(1) Merensky Reef, Rustenburg Platinum Mine, Bushveld igneous complex, South Africa; average electron microprobe and Raman spectroscopic analyses; corresponding to
 $(\text{Pt}_{1.00}\text{Pd}_{0.001})_{\Sigma=1.002}\text{Sn}_{0.997}\text{S}_{1.001}$. (2) PtSnS.

Mineral Group: Platinum group mineral. Isotypic with cobaltite.

Occurrence: Probably by low-T exsolution of Pt-Sn phases from high-T sulfides crystallized from a sulfide melt in a layered, mafic-ultramafic intrusion.

Association: Chalcopyrite, pyrrhotite, pentlandite, moncheite, plagioclase, pyroxene, serpentine-subgroup, amphibole-supergroup minerals.

Distribution: From the Merensky Reef, Rustenburg Platinum Mine, Bushveld igneous complex, South Africa.

Name: Honors Dr. John Frederick William *Bowles* (b. 1941), Manchester University, United Kingdom, for contributions to ore mineralogy and mineral deposits in mafic-ultramafic rocks.

Type Material: Department of Earth Sciences, Natural History Museum, London, England (BM 2019,11 holotype) and the Natural History Museum, University of Pisa, Italy (19909 anthropotype).

References: (1) Vymazalová, A., F. Zaccarini, G. Garuti, F. Laufek, D. Mauro, C.J. Stanley, and C. Biagoni (2020) Bowlesite, PtSnS, a new platinum group mineral (PGM) from the Merensky Reef of the Bushveld Complex, South Africa. *Mineral. Mag.*, 84, 468-476.