

Crystal Data: Tetragonal. *Point Group:* 4/m 2/m 2/m. As inclusions to 50 μm.

Physical Properties: *Cleavage:* n.d. *Fracture:* n.d. *Tenacity:* Brittle. *Hardness* = n.d.
D(calc.) = 9.72

Optical Properties: Opaque. *Color:* n.d.; light yellow in reflected light. *Streak:* n.d.
Luster: Metallic.

Optical Class: *Anisotropism:* Weak. *Birefractance:* Weak. *Pleochroism:* Weak, shades of slightly yellowish brown.

R₁-R₂: (400) 40.0-41.2, (420) 40.6-41.8, (440) 41.1-42.3, (460) 41.7-42.8, (470) 41.9-43.0, (480) 42.2-43.3, (500) 42.7-43.9, (520) 43.2-44.4, (540) 43.7-44.9, (546) 43.9-45.1, (560) 44.2-45.4, (580) 44.7-45.9, (589) 44.9-46.1, (600) 45.2-46.3, (620) 45.6-46.8, (640) 46.1-47.3, (650) 46.3-47.5, (660) 46.5-47.8, (680) 47.0-48.3, (700) 47.4-48.9

Cell Data: Space Group: *I4/mmm*. *a* = 8.0266(2) *c* = 9.1531(2) *Z* = 2

X-ray Powder Pattern: Komsomolsky mine, Noril'sk region, Russia.
2.412 (100), 2.325 (61), 2.287 (48), 2.839 (46), 2.007 (40), 1.509 (30), 2.220 (29)

Chemistry:	(1)	(2)
Pd	52.61	55.69
Bi	22.21	24.30
Pb	3.92	
Ag	14.37	12.54
S	7.69	7.46
Se	0.10	
Total	100.90	99.99

(1) Komsomolsky mine, Noril'sk region, Russia; average of 3 electron microprobe analyses supplemented by Raman spectroscopy; corresponds to Pd_{8.46}Ag_{2.28}(Bi_{1.82}Pb_{0.32})_{Σ=2.14}(S_{4.10}Se_{0.02})_{Σ=4.12}.
(2) Pd₉Ag₂Bi₂S₄.

Occurrence: In vein-disseminated galena-pyrite-chalcopyrite and millerite-bornite-chalcopyrite deposits hosted by diopside-hydrogrossular metasomatites developed in diopside-monticellite skarns (Komsomolsky mine); in PGE ores in a layered intrusive (Fedorov-Pana intrusive).

Association: Braggite, vysotskite, stibiopalladinite, telargpalite, sobolevskite, kotulskite, sopcheite, moncheite, malyshevite, insizwaite, acanthite, aurian silver, kravtsovite, vymazalváite, galena, chalcopyrite, bornite, millerite, pyrite.

Distribution: From the Komsomolsky mine, Talnakh and Oktyabrsk deposits, Noril'sk region, and the Fedorov-Pana layered intrusive, Russia.

Name: Honors Associate Professor Oskar Thalhammer (b. 1956), University of Leoben, Austria, for his contributions to understanding the ore mineralogy and deposits of platinum group elements.

Type Material: Department of Earth Sciences, Natural History Museum, London, England (BM 2016, 150).

References: (1) Vymazalová, A., F. Laufek, S.F. Sluzhenikin, V.V. Kozlov, C.J. Stanley, J. Plášil, F. Zaccarini, G. Garuti, and R. Bakker (2018) Thalhammerite, Pd₉Ag₂Bi₂S₄, a new mineral from the Talnakh and Oktyabrsk Deposits, Noril'sk Region, Russia. *Minerals*, 8(8), 339. (2) (2020) *Amer. Mineral.*, 105(8), 1282-1283 (abs. ref. 1).