Norilskite  
(Pd,Ag)₇Pb₄

Crystal Data: Hexagonal.  
Point Group: 32.  
As anhedral grains to ~400 μm.

Physical Properties: Cleavage: n.d.  
Fracture: n.d.  
Tenacity: Brittle.  
Hardness = 4.  
VHN = 296-342, 310 average (20 g load).  
D(meas.) = n.d.  
D(calc.) = 12.99

Optical Properties: Opaque.  
Color: Orange-brownish pink in reflected light.  
Streak: Gray.  
Luster: Metallic.  
Optical Class: Uniaxial (−).  
Birefringence: Strong.  
Pleochroism: Strong, orange-pink to grayish orange-pink.  
Anisotropism: Strong, dull yellow to dull blue in partially crossed polars.  
R₁-R₂: (470) 51.1-48.8, (546) 56.8-52.2, (589) 59.9-53.5, (650) 64.7-55.5

Cell Data: Space Group: P3₁21.  
\(a = 8.9656(4)\) \(c = 17.2801(8)\) \(Z = 6\)

X-ray Powder Pattern: Synthetic analogue \((\text{Pd}_{0.25}\text{Ag}_{0.56})\text{Pb}_{4.81}\)  
2.241 (100), 2.313 (91), 0.9626 (44), 1.308 (38), 1.212 (37), 3.220 (29), 1.610 (28)

Chemistry:  
\[
\begin{array}{c|c}
\text{Pd} & 44.33 \\
\text{Ag} & 2.68 \\
\text{Bi} & 0.33 \\
\text{Pb} & 52.34 \\
\text{Total} & 99.68 \\
\end{array}
\]

(1) Talnakh deposit, Noril’sk district, Russia; average of 16 electron microprobe analyses;  
corresponds to \((\text{Pd}_{0.56}\text{Ag}_{0.39})\text{Pb}_{4.95}\)  

Occurrence: Formed in a differentiated mafic intrusion.

Association: Polarite, zvyagintsevite, Pd-rich tetra-auricupride, Pd-Pt-bearing auricupride, Ag-Au alloys, (Pb,As,Sb)-bearing atokite, mayakite, Bi-Pb-rich kotsulksite, sperrylite, pentlandite, cubanite, talnakhite.

Distribution: From the Mayak and Komsomolsky mines, Talnakh deposit, Noril’sk district, Russia.

Name: For the mining district in Russia that provided the first specimens.

Type Material: Department of Earth Sciences, Natural History Museum, London, England (BM 2015, 1) and the A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (4694/1).

(Pd,Ag)₇Pb₄, a new mineral from Noril’sk-Talnakh deposit, Russia. Mineral. Mag., 81(3), 531-541.  