

Crystal Data: Hexagonal. *Point Group:* n.d. As elongated and rounded cubic crystals up to 0.1 mm, intergrown with niggliite. *Twinning:* Occasionally exhibited polysynthetically.

Physical Properties: Hardness = n.d. VHN = 220–228; 387–452. D(meas.) = n.d. D(calc.) = n.d.

Optical Properties: Opaque. *Color:* Brown-rose, pale pink. *Anisotropism:* Strong, from lilac-red to gray-blue.

R₁–R₂: (460) 46.2–48.5, (500) 50.3–51.5, (540) 53.0–54.0, (580) 54.0–55.5, (620) 56.0–57.8, (660) 57.0–60.0, (700) 57.0–61.0

Cell Data: *Space Group:* n.d. *a* = 4.40 *c* = 5.66 *Z* = [1]

X-ray Powder Pattern: Synthetic Pd₃Sn₂. (JCPDS 4-801). 2.27 (100), 2.20 (100), 1.58 (70), 1.28 (70), 1.19 (70), 0.834 (70), 0.830 (70)

Chemistry:

	(1)	(2)
Pd	40. – 45.	58
Pt	15. – 20.	2
Fe	0.3 – 2.3	
Sn	28. – 33.	38
Cu	5. – 12.	
Ni	0.1 – 0.7	
insol.	0.25 – 2.5	
Total		98

(1) Noril'sk region (?), USSR; by electron microprobe, ranges of analyses. (2) Monchegorsk, USSR; by electron microprobe, average of analyses.

Occurrence: In sulfide Cu-Ni ores (Noril'sk region (?), USSR).

Association: Chalcopyrite, Pt-Fe alloy (Noril'sk region (?), USSR); niggliite, hessite, tellurides of Pt and Pd (Monchegorsk, USSR).

Distribution: Originally described from a locality thought to be in the Noril'sk region, and since described from the Taimyr mine, Talnakh area, of that region in western Siberia; the species later redefined from Monchegorsk, Kola Peninsula; also at the Ugol'nri Ruch' placer, all in the USSR.

Name: For the composition.

Type Material: n.d.

References: (1) Maslenitzky, I.N., P.V. Faleev, and E.V. Iskyul (1947) Tin-bearing minerals of the platinum group in sulfide copper-nickel ores. Doklady Acad. Nauk SSSR, 58, 1137–1140 (in Russian). (2) (1949) Mineral. Abs., 10, 453 (abs. ref. 1). (3) Chernyaev, I.A. and O.E. Yushko-Zakharova (1970) Diagnosis of micro-inclusions of minerals of the platinum group by means of the JXA-3A X-ray spectroscopic analyzer. In: Physical properties of rare-metal minerals and methods for their study. Izdat. "Nauka", 80–81 (in Russian). (4) (1971) Amer. Mineral., 56, 360–361 (abs. ref. 3). (5) Cabri, L.J., Ed. (1981) Platinum group elements: mineralogy, geology, recovery. Can. Inst. Min. & Met., 139.