

Rustenburgite

(Pt, Pd)₃Sn

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Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. As grains, rarely showing {001}, to 100 μm , and as droplike inclusions.

Physical Properties: Hardness = n.d. VHN = 365 (25 g load). D(meas.) = n.d.
D(calc.) = 15.08

Optical Properties: Opaque. *Color:* In polished section, pale cream. *Luster:* Metallic.
Anisotropism: Slight, due to strain.

R₁–R₂: (480) 56.2, (546) 59.8, (589) 60.4, (656) 61.65

Cell Data: *Space Group:* $Fm\bar{3}m$ (probable) or $Pm\bar{3}m$. $a = 3.991$ $Z = 4$

X-ray Powder Pattern: Merensky Reef, South Africa.
2.295 (100), 1.202 (100), 1.408 (90), 0.9153 (90), 0.8145 (90), 1.992 (80), 0.8922 (80)

Chemistry:	(1)
Pt	53.44
Pd	28.28
Sn	17.70
Total	99.42

(1) Merensky Reef, South Africa; by electron microprobe, corresponding to $(\text{Pt}_{1.52}\text{Pd}_{1.48})_{\Sigma=3.00}\text{Sn}_{0.83}$.

Polymorphism & Series: Forms a series with atokite.

Occurrence: As very sparse grains in concentrates (Merensky Reef, South Africa).

Association: Atokite, unspecified platinum tellurides (Merensky Reef, South Africa); moncheite, pyrrhotite, pentlandite (Stillwater complex, Montana, USA).

Distribution: In the Rustenburg [TL], Atok, and Onverwacht mines, on the Merensky Reef, Bushveld complex, Transvaal, South Africa. From the Upper Banded Zone of the Stillwater complex, Montana, USA. In Russia, at Noril'sk, western Siberia; from the Ioko-Dovyren ultramafic pluton, northern Baikal district, eastern Siberia.

Name: For its occurrence in the Rustenburg mine, South Africa.

Type Material: n.d.

References: (1) Mihálik, S.A., S.A. Hiemstra, and J.P.R. de Villiers (1975) Rustenburgite and atokite, two new platinum-group minerals from the Merensky Reef, Bushveld Igneous Complex. *Can. Mineral.*, 13, 146–150. (2) (1976) *Amer. Mineral.*, 61, 340 (abs. ref. 1).