

**Crystal Data:** Cubic. *Point Group:*  $4/m\bar{3}2/m$ . As equant grains < 1 mm.

**Physical Properties:** *Cleavage:* n.d. *Tenacity:* Malleable. *Fracture:* n.d. Hardness = 2-2.5 VHN = 348-370, 362 average (100 g load). D(meas.) = n.d. D(calc.) = 10.94

**Optical Properties:** Opaque. *Color:* Black; light gray (pinkish gray in oil) in reflected light. *Streak:* n.d. *Luster:* Metallic. *Optical Class:* Isotropic.

R: (470) 48.88 (29.5)<sub>oil</sub>, (546) 51.63 (31.6)<sub>oil</sub>, (589) 53.91 (33.7)<sub>oil</sub>, (650) 56.82 (36.65)<sub>oil</sub>

**Cell Data:** *Space Group:*  $Fd\bar{3}m$ .  $a = 12.448(2)$   $Z = 8$

**X-Ray Diffraction Pattern:** Miessijoki river, Lemmenjoki area, Inari Commune, Finland. 2.197 (100), 2.395 (80), 1.271 (30), 1.875 (25), 1.555 (25), 1.305 (25), 2.543 (20)

<b>Chemistry:</b>	(1)	(2)
Pd	75.17	73.91
Se	9.61	9.97
Te	17.06	16.11
Total	101.84	100.00

(1) Miessijoki river, Lemmenjoki area, Inari Commune, Finland; average electron microprobe analysis; corresponds to Pd<sub>11.02</sub>Te<sub>2.09</sub>Se<sub>1.90</sub>. (2) Pd<sub>11</sub>Te<sub>2</sub>Se<sub>2</sub>.

**Occurrence:** With gold and PGM nuggets in a placer sample from a river draining glaciofluvial gravels, sands, terraces, poorly-sorted sandy till and weathered bedrock.

**Association:** Stillwaterite, isomertieite, mertieite-II, cooperite, braggite, kotulskite, vincentite, tantalite, thorianite, pyrite, magnetite, chromite, isoferroplatinum, laurite, Os-Ir-Ru alloy.

**Distribution:** From the Miessijoki river, Lemmenjoki area, Inari Commune, Finnish Lapland, Finland.

**Name:** After the locality, the *Miessijoki* river (in Saami language, Miessijohka).

**Type Material:** Finnish Museum of Natural History, Geological Museum, University of Helsinki, Finland (D3004).

**References:** (1) Kojonen, K.K., M. Tarkian, A.C. Roberts, R. Törnroos, and S. Heidrich (2007) Miessiiite, Pd<sub>11</sub>Te<sub>2</sub>Se<sub>2</sub>, a new mineral species from Miessijoki, Finnish Lapland, Finland. *Can. Mineral.*, 45, 1221-1227.