Crystal Data: Tetragonal. *Point Group*: 422. As grains to 116 μm.

Physical Properties: *Cleavage*: None. *Fracture:* n.d. Hardness = n.d. *Tenacity*: Slightly malleable. D(meas.) = n.d. D(calc.) = 7.258

Optical Properties: Opaque. *Color*: Dark gray, bright creamy white in reflected light.
Streak: n.d. *Luster*: Metallic.
Optical Class: n.d. *Anisotropism*: Weak, pale blue-gray to deep blue.
R_1-R_2: (470) 50.2-50.5, (546) 55.6-55.9, (589) 57.9-58.3, (650) 60.2-60.7

Cell Data: *Space Group*: $P4_12_12$, $P4_122$, $P4_32_12$, $P4_22_12$, or $P4_222$. a = 7.7388(4) c = 24.145(1)
Z = 8

X-ray Powder Pattern: Mesamax Northwest deposit, Ungava region, Quebec, Canada.
2.263 (100), 3.008 (90), 1.9404 (60), 2.147 (30), 1.2043 (30), 1.2002 (30), 1.6337 (20)

Chemistry:

	(1)	(2)
As	0.20	
Fe	0.13	
Te	0.09	
Sb	44.59	46.18
Bi	0.42	
Hg	0.19	
Pd	54.53	53.82
Total	100.15	100.00

(1) Mesamax Northwest deposit, Ungava region, Quebec, Canada; average of 16 electron microprobe analyses, corresponds to $Pd_{4.043}(Sb_{2.889}As_{0.021}Fe_{0.018}Bi_{0.016}Hg_{0.007}Te_{0.006})_{\Sigma=2.957}$.
(2) Pd_4Sb_3.

Occurrence: As grains in heavy-mineral concentrates derived from drill-core from ultramafic rocks. Likely the product of hydrothermal remobilization of Pd (and possibly Sb) from pre-existing sulfides. Probably developed below 400°C; possibly through a solid state, order-disorder transformation.

Association: Chalcopyrite, a chlorite-group mineral, cobaltite, galena, magnetite, pentlandite, monoclinic pyrrhotite, sphalerite, altaite, Au-Ag alloy, hessite, michenerite, naldrettite, petzite, sperrylite, sudburyite.

Distribution: From the Mesamax Northwest Ni-Cu-Co-PGE deposit, in the Cape Smith fold belt of the Ungava region, northern Quebec, Canada.

Name: For the *Ungava* region, in which it was discovered.

Type Material: Natural History Museum, London, England (BM 2004, 34) and the Canadian Museum of Nature, Ottawa, Canada (CNMMN 84397).

References: (1) McDonald, A.J., L.J. Cabri, C.J. Stanley, N.S. Rudashevsky, G. Poirier, J.E. Mungall, K.C. Ross, B.R. Durham, and V.N. Rudashevsky (2005) Ungavaite, Pd_4Sb_3, a new intermetallic mineral species from the Mesamax Northwest deposit, Ungava region, Quebec, Canada: description and genetic implications. Can. Mineral., 43, 1735-1744. (2) (2006) Amer. Mineral., 91, 1207 (abs. ref. 1).