Argentopentlandite $Ag(Fe,Ni)_8S_8$

Crystal Data: Cubic. *Point Group:* $4/m\ \overline{3}\ 2/m$. As euhedral crystals with well developed octahedral faces; as patches in other sulfides; massive.

Physical Properties: *Cleavage:* Well developed on {111}. Hardness = n.d. VHN = 132–154 (50 g load). D(meas.) = n.d. D(calc.) = 4.66

Optical Properties: Opaque. *Color:* Bronze-brown; cinnamon-brown in polished section. *Luster:* Metallic.
R: (400) 20.4, (420) 21.0, (440) 21.9, (460) 22.9, (480) 24.2, (500) 25.6, (520) 27.2, (540) 28.8, (560) 30.4, (580) 31.9, (600) 33.3, (620) 34.6, (640) 35.8, (660) 36.8, (680) 37.8, (700) 38.6

Cell Data: *Space Group: Fm3m.* a = 10.521(3) Z = 4

X-ray Powder Pattern: Vuonos, Finland.
3.170 (10), 1.858 (10), 2.018 (4), 1.072 (3), 6.06 (2), 5.25 (2), 3.71 (2)

Chemistry:

	(1)	(2)		(1)	(2)
Ag	13.3	12.1	Cu		0.6
Fe	34.7	35.6	S	31.4	31.5
Ni	21.3	20.0	Total	100.7	99.8

(1) Oktyabr mine, Russia; by electron microprobe, corresponds to $Ag_{1.01}(Fe_{5.08}Ni_{2.97})_{\Sigma=8.05}S_{8.00}$.
(2) Talnotry mine, Scotland; by electron microprobe, corresponds to $Ag_{0.91}(Fe_{5.19}Ni_{2.78})_{\Sigma=7.97}S_{8.00}$.

Mineral Group: Pentlandite group.

Occurrence: In pyrite and cubanite-chalcopyrite hydrothermal veins in ultramafic rocks and in skarn; in hydrothermal veins in acidic volcanics; rare in carbonatites.

Association: Pyrite, pyrrhotite, mackinawite, cubanite, chalcopyrite, stannite, galena, sphalerite, calcite, quartz.

Distribution: In Russia, in the Oktyabr mine, Talnakh area, Noril'sk region, western Siberia [TL], and the Khovu-Aksy Co–Ni deposit, Tuva [TL]. In the Vuonos, Miihkali, Hietajärvi, and Outokumpu deposits, Finland. In Scotland, at the Talnotry mine, Newton Stewart, Kirkcudbrightshire. From El Charcón, Murcia Province, Spain. At Koronuda, Macedonia, Greece. From Bottino, Tuscany, Italy. In the Loolekop carbonatite, Phalaborwa, Transvaal, South Africa. From Bird River, and the Agassiz gold deposit, Lynn Lake region, Manitoba, Canada. In the USA, from near Silver City, Ontonogan Co., Michigan. From Windaira, Western Australia. In the Juimao tin mine, Guangxi Province, China.

Name: For the similarity in composition to pentlandite.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 74159.

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