Samaniite $Cu_2Fe_5Ni_2S_8$

Crystal Data: Tetragonal. *Point Group*: 4/*m* 2/*m* 2/*m*. As grains, to 0.1 mm.

Physical Properties: *Cleavage*: None. *Fracture*: Uneven. *Tenacity*: Brittle.
Hardness = 3 VHN = 130 (50 g load). D(meas.) = n.d. D(calc.) = 4.89

Optical Properties: Opaque. *Color*: Yellowish white macroscopically and in reflected light.
Streak: n.d. *Luster*: Metallic.
Optical Class: n.d. *Pleochroism*: Weak, yellowish white to pale yellowish white.
Anisotropism: Weak, dark-gray to light-gray.
R_1-R_2: (436) 27.1-29.6, (497) 34.4-37.9, (543) 38.9-43.6, (586) 44.9-49.8, (648) 42.2-46.9

Cell Data: *Space Group*: $P4_2/mmm$. a = 10.089(1) c = 10.402(8) Z = 4

X-ray Powder Pattern: Horoman massif, Samani-cho, Samani-gun, Hokkaido, Japan.
3.118 (100), 1.844 (50), 1.595 (45), 1.873 (25), 3.050 (20), 5.88 (15), 2.703 (5)

Chemistry:

	(1)
Cu	16.90
Fe	34.60
Ni	15.48
Co	0.16
S	32.87
Total	100.01

(1) Horoman massif, Samani-cho, Samani-gun, Hokkaido, Japan; average of 10 electron microprobe analyses, corresponding to $Cu_{2.08}(Fe_{4.84}Ni_{2.06}Co_{0.02})_{\Sigma=6.92}S_8$.

Occurrence: Filling space between silicate minerals in lherzolites of a peridotite massif.

Association: Horomanite and sugakiite as intergrowths; bornite, talnakhite, copper, troilite, heazlewoodite, pentlandite, magnetite, olivine, clino- and orthopyroxenes.

Distribution: Horoman peridotite massif, Samani-cho, Samani-gun, Hokkaido, Japan.

Name: For the region of Japan (*Samani*-cho) from which the first specimens were collected.

Type Material: Tohoku University Museum, Japan.

References: (1) Kitakaze, A., H. Itoh, and R. Komatsu (2011) Horomanite, $(Fe,Ni,Co,Cu)_9S_8$, and samaniite, $Cu_2(Fe,Ni)_7S_8$, new mineral species from the Horoman peridotite massif, Hokkaido, Japan. Journal of Mineralogical and Petrological Sciences, 106, 204-210. (2) (2014) Amer. Mineral., 99, 552-553 (abs. ref. 1).