Tellurohauchecornite Ni_9BiTeS_8

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$. As irregular grains, to 150 μm.

Physical Properties: Hardness = n.d. VHN = 812–825 (50 g load). D(meas.) = n.d. D(calc.) = 6.50

Optical Properties: Opaque. *Color:* Bronze-yellow.

R_1–R_2: (470) 41.2–44.8, (546) 43.9–47.7, (589) 45.6–49.4, (650) 48.2–51.9

Cell Data: *Space Group:* $P4/mmm$. a = 14.64 $c = 10.87$ Z = 8

X-ray Powder Pattern: Strathcona mine, Sudbury, Canada.
2.80 (100), 2.314 (60), 2.405 (50), 4.35 (40), 3.66 (40), 3.28 (40), 1.868 (40)

Chemistry:

	(1)	(2)
Ni	44.1	47.12
Fe	0.9	
Co	0.9	
Bi	22.4	18.63
As	0.0	
Sb	0.0	
Te	8.5	11.38
S	21.9	22.87
Total	98.7	100.00

(1) Strathcona mine, Sudbury, Canada; by electron microprobe; corresponds to $(Ni_{8.80}Fe_{0.19}Co_{0.18})_{\Sigma=9.17}Bi_{1.26}Te_{0.78}S_{8.00}$. (2) Ni_9BiTeS_8.

Mineral Group: Hauchecornite group.

Occurrence: In hydrothermal Ni–Co–Cu sulfide veins.

Association: Millerite, chalcopyrite.

Distribution: From the Strathcona mine, Sudbury, Ontario, Canada [TL].

Name: Alludes to its chemical relation to the hauchecornite group.

Type Material: Royal Ontario Museum, Toronto, Canada, M30942.

References: (1) Gait, R.L. and D.C. Harris (1980) Arsenohauchecornite and tellurohauchecornite: new minerals in the hauchecornite group. Mineral. Mag., 43, 877–888. (2) (1981) Amer. Mineral., 66, 436 (abs. ref. 1). (3) Gait, R.L. and D.C. Harris (1972) Hauchecornite—antimonian, arsenian and tellurian varieties. Can. Mineral., 11, 819–825.