Cuprostibite Cu_2Sb

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$. As fine-grained aggregates, to 1.5 mm in diameter. *Twinning:* Platy [*sic*].

Physical Properties: *Cleavage:* One direction. *Fracture:* Uneven. Hardness = n.d. VHN = 216–249 (50 g load). D(meas.) = n.d. D(calc.) = 8.42

Optical Properties: Opaque. *Color:* Steel-gray, red-violet tint on fresh fracture; in reflected light, rose-violet. *Luster:* Metallic. *Pleochroism:* Creamy white to dark rose-violet. *Anisotropism:* Strong.
R_1–R_2: (400) 51.1–58.6, (420) 52.5–58.5, (440) 52.2–56.9, (460) 50.0–54.9, (480) 47.4–52.6, (500) 45.5–50.3, (520) 42.2–47.6, (540) 37.8–45.0, (560) 35.4–42.5, (580) 35.7–41.7, (600) 39.6–43.0, (620) 45.4–45.9, (640) 50.7–49.3, (660) 55.9–52.0, (680) 59.7–54.3, (700) 62.6–55.7

Cell Data: *Space Group:* $P4/nmm$. $a = 3.990$ $c = 6.09$ $Z = 2$

X-ray Powder Pattern: Mt. Nákâlâq, Greenland.
2.07 (100), 2.56 (50), 2.82 (40), 1.993 (40), 1.167 (40), 1.424 (30), 3.33 (20)

Chemistry:

	(1)	(2)	(3)	(4)
Cu	53.3	50.4	52.0	51.07
Tl	3.5			
Ag	0.1			
Sb	42.0	48.9	48.4	48.93
S	1.1			
Total	100.0	99.3	100.4	100.00

(1) Mt. Nákâlâq, Greenland; by electron microprobe, average of three analyses; corresponds to $Cu_{2.00}(Sb_{0.82}S_{0.08}Tl_{0.04})_{\Sigma=0.94}$. (2) Långban, Sweden; by electron microprobe, average of three analyses; corresponds to $Cu_{2.00}Sb_{1.01}$. (3) Kangerdluarssuk Plateau, Greenland; by electron microprobe, corresponds to $Cu_{2.00}Sb_{0.97}$. (4) Cu_2Sb.

Occurrence: As fine-grained aggregates in a vein of ussingite cutting sodalite syenite (Ilímaussaq intrusion, Greenland); in sulfide veins in metamorphic siliceous dolostone (Långsjön, Sweden).

Association: Löllingite, antimonian silver, chalcopyrite, chalcothallite (Ilímaussaq intrusion, Greenland); chalcocite, bismuth (Långban, Sweden); sphalerite, galena, dyscrasite, gudmundite, breithauptite, antimony (Långsjön, Sweden).

Distribution: In southern Greenland, from Mt. Nákâlâq [TL], northwest of Taseq Lake, and at other localities in the Ilímaussaq intrusion. From Långsjön, at Långban, and in the Getberg mine, near Långban, Värmland, Sweden. From Franklin, Sussex Co., New Jersey, USA.

Name: For copper, CUPRum, and antimony, STIBium, in the composition.

Type Material: University of Copenhagen, Copenhagen, Denmark.

References: (1) Sørensen, H., E.I. Semenov, M.S. Bezsmertnaya, and E.B. Khalezova (1969) Cuprostibite, a new natural compound of copper and antimony. Zap. Vses. Mineral. Obshch., 98, 716–724 (in Russian). (2) (1970) Amer. Mineral., 55, 1810 (abs. ref. 1). (3) Burke, E.A.J. (1980) Cuprostibite, cuprian galena, altaite, cuprian massicot, wittichenite, and bismuthinite from Långban, Sweden. Neues Jahrb. Mineral., Monatsh., 241–246. (4) Hålenius, U. and C. Ålinder (1982) Occurrence and formation of cuprostibite in a Zn–Pb–Ag mineralized siliceous dolomite at Långsjön, central Sweden. Neues Jahrb. Mineral., Monatsh., 201–215. (5) Elander, M., G. Hägg, and A. Westgren (1935) The crystal structure of Cu_2Sb and Fe_2As. Ark. Kem. Min. Geol., 12B(1), 1–6. (6) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 131.