

**Crystal Data:** Orthorhombic, pseudotetragonal. *Point Group:* 222, *mm*2, or 2/*m* 2/*m* 2/*m*. Rarely as euhedral and subhedral crystals, to 0.5 mm; in patchy aggregates.

**Physical Properties:** *Tenacity:* Malleable. Hardness = n.d. VHN = 94 (25 g load). D(meas.) = n.d. D(calc.) = 7.752

**Optical Properties:** Opaque. *Color:* In reflected light, yellowish cream to dull bluish gray. *Luster:* Metallic. *Pleochroism:* Distinct to strong. *Anisotropism:* Very strong, from yellowish cream to black, with dark red-purple colors present near extinction.

R<sub>1</sub>–R<sub>2</sub>: (400) —, (420) 31.6–36.4, (440) 30.7–36.6, (460) 30.0–36.7, (480) 29.2–36.5, (500) 28.4–36.1, (520) 27.9–36.0, (540) 27.0–35.4, (560) 26.6–35.2, (580) 26.5–35.0, (600) 26.3–34.6, (620) 26.1–34.4, (640) 25.6–34.0, (660) 25.4–33.9, (680) 24.8–33.7, (700) 24.4–33.7

**Cell Data:** *Space Group:* P222, Pmm2, or Pmmm. *a* = 7.602(2) *b* = 3.801(2) *c* = 20.986(8) *Z* = 2

**X-ray Powder Pattern:** Ilímaussaq intrusion, Greenland.

3.078 (100), 2.393 (100), 3.800 (90), 1.902 (90), 2.623 (50), 2.605 (50), 2.577 (50)

**Chemistry:**

	(1)	(2)	(3)
Tl	26.6	27.7	28.87
Cu	18.6	17.8	17.20
Pb	2.0	1.6	
Fe	0.3	0.3	
Sb	41.0	43.5	44.87
S	9.3	9.6	9.06
Total	97.8	100.5	100.00

(1) Ilímaussaq intrusion, Greenland; by electron microprobe, average of seven grains; corresponding to Tl<sub>0.97</sub>(Cu<sub>4.79</sub>Fe<sub>0.07</sub>)<sub>Σ=4.86</sub>Pb<sub>0.04</sub>Sb<sub>1.13</sub>S<sub>2.15</sub>. (2) Do.; by electron microprobe, average of eight grains, corresponding to Tl<sub>0.97</sub>(Cu<sub>4.89</sub>Fe<sub>0.06</sub>)<sub>Σ=4.95</sub>Pb<sub>0.04</sub>Sb<sub>1.05</sub>S<sub>2.14</sub>. (3) TlCu<sub>5</sub>SbS<sub>2</sub>.

**Occurrence:** In veins cutting an alkalic intrusive.

**Association:** Chalcocite, löllingite, cuprite, antimonian silver, analcime, sodalite.

**Distribution:** From the Ilímaussaq intrusion, southern Greenland [TL].

**Name:** In honor of Professor John ROse-HAnsen (1937–), Danish mineralogist, University of Copenhagen, Denmark.

**Type Material:** University of Copenhagen, Copenhagen, Denmark, 1979,1211.

**References:** (1) Karup-Møller, S. (1978) Primary and secondary ore minerals associated with cuprostibite. Bull. Grønlands Geol. Undersøgelse, 126, 23–45. (2) (1980) Amer. Mineral., 65, 208–209 (abs. ref. 1). (3) Makovicky, E., Z. Johan, and S. Karup-Møller (1980) New data on bukovite, thalculusite, chalcotallite and rohaite. Neues Jahrb. Mineral., Abh., 138, 122–146. (4) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 481.