

Crystal Data: Orthorhombic. *Point Group:* n.d. As anhedral polycrystalline aggregates, to 300 μm .

Physical Properties: *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = n.d. VHN = 599 (100 g load). D(meas.) = n.d. D(calc.) = 7.91

Optical Properties: Opaque. *Color:* Silver-white; silver-white in reflected light. *Streak:* Gray. *Luster:* Metallic.

Optical Class: Biaxial. *Anisotropism:* Weak to distinct; reddish brown to darker pale violet and purplish blue.

R_1 – R_2 : 55.5–58.2 (470), 55.6–56.8 (546), 55.5–55.8 (589), 55.5–55.0 (650)

Cell Data: *Space Group:* n.d. $a = 3.304(6)$ $b = 6.092(8)$ $c = 10.258(13)$ $Z = 4$

X-ray Powder Pattern: Tunaberg, Sweden.

2.63 (10), 1.942 (10), 2.53 (8), 1.1182 (8), 1.730 (4), 1.640 (4), 1.3963 (4)

Chemistry:	(1)	(2)
Co	15.4	23.06
Ni	2.7	
Cu	0.1	
Fe	5.6	
As	26.9	29.31
Sb	47.4	47.63
S	2.0	
Total	100.1	100.00

(1) Tunaberg, Sweden; by electron microprobe, average of 21 analyses; corresponding to $(\text{Co}_{0.65}\text{Fe}_{0.24}\text{Ni}_{0.11})_{\Sigma=1.00}(\text{Sb}_{0.96}\text{As}_{0.04})_{\Sigma=1.00}(\text{As}_{0.85}\text{S}_{0.15})_{\Sigma=1.00}$. (2) CoSbAs.

Occurrence: In Cu–Co-bearing skarns.

Association: Chalcopyrite, bismuth, dyscrasite, allargentum, breithauptite, nisbite, tetrahedrite, cobaltite, gudmundite, löllingite, magnetite, galena, sphalerite, other sulfides.

Distribution: From Tunaberg, Bergslagen metallic province, Sweden [TL].

Name: In honor of Dr. Ing Soen Oen (1928–1996), Professor of Mineralogy, University of Amsterdam and Free University of Amsterdam, Amsterdam, The Netherlands, for his contributions to the geology and mineralogy of ore deposits.

Type Material: Geological Institute, University of Amsterdam, Amsterdam; Institute of Earth Sciences, Free University of Amsterdam, Amsterdam, The Netherlands.

References: (1) Dobbe, R.T.M. and M.A. Zakrzewski (1998) Oenite, CoSbAs, a new mineral species from the Tunaberg Cu–Co-sulfide skarns, Bergslagen, Sweden. *Can. Mineral.*, 36, 855–860. (2) (1999) *Amer. Mineral.*, 84, 999 (abs. ref. 1).