

Crystal Data: Cubic. *Point Group:* $2/m\bar{3}$. Intergrown with clausthalite as irregular grains, to 1 mm.

Physical Properties: Hardness = ~ 7 VHN = n.d. D(meas.) = 7.09 (synthetic). D(calc.) = 7.12

Optical Properties: Opaque. *Color:* Rose-violet. *Luster:* Metallic.

R: (400) 42.5, (420) 42.2, (440) 41.9, (460) 41.4, (480) 41.0, (500) 40.8, (520) 41.1, (540) 41.3, (560) 42.0, (580) 42.6, (600) 43.3, (620) 43.9, (640) 44.5, (660) 45.2, (680) 45.6, (700) 45.8

Cell Data: *Space Group:* $Pa\bar{3}$. $a = 5.87(2)$ $Z = 4$

X-ray Powder Pattern: Musonoi mine, Congo.
2.64 (100), 2.419 (90), 1.788 (80), 2.95 (70), 1.585 (70), 1.644 (50), 1.295 (50)

Chemistry:	(1)	(2)
Co	17.09	27.18
Cu	9.02	
Pd	4.67	
Se	69.77	72.82
Total	100.55	100.00

(1) Musonoi mine, Congo; by electron microprobe, corresponding to a cuproan-palladian variety (Co_{0.65}Cu_{0.32}Pd_{0.09})_{Σ=1.06}Se_{2.00}. (2) CoSe₂.

Polymorphism & Series: Dimorphous with hastite.

Mineral Group: Pyrite group.

Occurrence: Intergrown with clausthalite (Trogtal quarry, Germany).

Association: Clausthalite, hastite, bornhardtite, selenium, gold (Trogtal quarry, Germany); oosterboschite (Musonoi mine, Congo).

Distribution: From the Trogtal quarry, near Lautenthal, Harz Mountains, Germany [TL]. At the Musonoi Cu–Co mine, near Kolwezi, Katanga Province, Congo (Shaba Province, Zaire). In Argentina, from Tuminico, Sierra de Cacho, and at Los Llantenes, La Rioja Province.

Name: For the occurrence at the Trogtal quarry, Germany.

Type Material: The Natural History Museum, London, England, 1980,400; National Museum of Natural History, Washington, D.C., USA, 112811.

References: (1) Ramdohr, P. and M. Schmitt (1955) Vier neue natürliche Kobaltselenide vom Steinbruch Trogtal bei Lautenthal im Harz. Neues Jahrb. Mineral., Monatsh., 133–142 (in German). (2) (1956) Amer. Mineral., 41, 164–165 (abs. ref. 1). (3) Johan, Z., P. Picot, R. Pierrot, and T. Verbeek (1970) L'oosterboschite (Pd, Cu)₇Se₅, une nouvelle espèce minérale et la trogtalite cupro-palladifère de Musonoi (Katanga). Bull. Soc. fr. Minéral., 93, 476–481 (in French with English abs.). (4) Bøhm, F., F. Grønvold, H. Haraldsen, and H. Prydz (1955) X-ray and magnetic study of the system cobalt selenium. Acta Chem. Scand., 9, 1510–1522.