Bornhardtite $Co^{2+}Co_2^{3+}Se_4$

Crystal Data: Cubic. *Point Group:* $4/m\ \overline{3}\ 2/m$. Massive.

Physical Properties: Hardness = ∼4 VHN = n.d. D(meas.) = n.d. D(calc.) = 6.166

Optical Properties: Opaque. *Color:* Rose-red.
R: (400) 41.3, (420) 42.8, (440) 44.3, (460) 45.4, (480) 46.4, (500) 47.2, (520) 47.8, (540) 48.4, (560) 49.2, (580) 49.2, (600) 49.7, (620) 50.2, (640) 50.8, (660) 51.4, (680) 52.0, (700) 52.7

Cell Data: *Space Group: Fd3m.* a = ∼10.2 Z = 8

X-ray Powder Pattern: Trogtal quarry, Germany.
2.7 (100), 2.4 (100), 2.3 (100), 2.2 (100), 2.0 (100), 1.96 (100), 1.42 (100)

Chemistry: No analysis appears ever to have been made.

Mineral Group: Linnaeite group.

Occurrence: Of hydrothermal origin.

Association: Trogtalite, hastite, clausthalite.

Distribution: In Germany, in the Harz Mountains, from the Trogtal quarry, near Lautenthal [TL], and at Tilkerode. In the Pinky Fault uranium deposit, Saskatchewan, Canada. From Cerro de Cacheuta, Mendoza Province, Argentina.

Name: Honors Dr. Wilhelm Bornhardt (1864–1946), German student of ore deposits.

Type Material: n.d.

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).