

Crystal Data: Monoclinic. *Point Group:* 2/*m*. Rarely as needlelike, columnar or platy crystals, vertically striated, to 5 mm. Commonly as irregular grains and fine-grained aggregates. *Twinning:* Polysynthetic.

Physical Properties: *Tenacity:* Very brittle. Hardness = 3–4 VHN = 187–213, 200 average. D(meas.) = 6.35 D(calc.) = 6.451

Optical Properties: Opaque. *Color:* Steel-gray with slightly yellowish tint on fresh surface, tarnishes quickly to brownish orange; in polished section, creamy with very slight pinkish tint.

Luster: Metallic. *Pleochroism:* Very weak. *Anisotropism:* Very feeble, in grays.

R₁–R₂: (400) 36.2–39.8, (420) 36.2–40.4, (440) 36.2–41.0, (460) 36.3–41.6, (480) 36.4–42.0, (500) 36.6–42.4, (520) 36.9–42.6, (540) 37.4–42.8, (560) 37.6–43.0, (580) 37.8–43.2, (600) 37.9–43.3, (620) 38.0–43.5, (640) 38.0–43.7, (660) 38.0–43.7, (680) 37.9–43.6, (700) 37.8–43.4

Cell Data: *Space Group:* A2/*m*. *a* = 27.205(50) *b* = 3.927(15) *c* = 17.575(50)
β = 92°9(10)' Z = 4

X-ray Powder Pattern: Banská Hodruša, Slovakia.

3.102 (vs), 3.62 (s), 2.715 (s), 3.22 (m/s), 3.48 (m), 1.722 (m), 1.450 (w/m)

Chemistry:

	(1)	(2)	(3)
Cu	13.88	13.30	13.66
Fe	0.44	0.34	
Pb		0.65	
Cd		0.06	
Ag		1.01	
Bi	64.92	64.41	67.39
S	18.98	18.90	18.95
Total	98.22	98.67	100.00

(1) Banská Hodruša, Slovakia; by electron microprobe, corresponding to Cu_{4.06}Fe_{0.15}Bi_{5.77}S_{11.00}.

(2) Ocna de Fier, Romania; by electron microprobe, average of ten analyses; corresponding to Cu_{3.90}Ag_{0.18}Fe_{0.12}Pb_{0.06}Cd_{0.01}Bi_{5.74}S_{11.00}. (3) Cu₄Bi₆S₁₁.

Occurrence: In a polymetallic ore deposit of subvolcanic type, in a quartz vein system developed in propylitized pyroxenite andesite (Banská Hodruša, Slovakia).

Association: Quartz, hematite, chalcopyrite, wittichenite (?), pavonite (Banská Hodruša, Slovakia).

Distribution: From the Rosalia mine, Banská Hodruša, near Banská Štiavnica (Schemnitz), Slovakia [TL]. In the Paulus mine, Ocna de Fier (Morávicza; Vaskő); at Băița (Rézbánya); and from Valea Seacă, Romania. In the USA, at the Black Metals (Jackrabbit) mine, Bristol district, Lincoln Co., Nevada; from the Alice mine, Clear Creek Co., Colorado; and in the Campbell mine, Bisbee, Cochise Co. From the Julcani district, Peru.

Name: For the mining community of Banská Hodruša, Slovakia.

Type Material: n.d.

References: (1) Koděra, M., V. Kupčík, and E. Makovický (1970) Hodrushite—a new sulfosalt. Mineral. Mag., 37, 641–648. (2) (1971) Amer. Mineral., 56, 633 (abs. ref. 1). (3) Makovický, E. and W.H. McLean (1972) Electron microprobe analysis of hodrushite. Can. Mineral., 11, 504–513. (4) Kupčík, V. and E. Makovický (1968) Die Kristallstruktur des Mineralen (Pb, Ag, Bi)Cu₄Bi₅S₁₁. Neues Jahrb. Mineral., Monatsh., 236–237 (in German). (5) Cook, N.J. and C.L. Ciobanu (2003) Lamellar minerals of the cuprobismutite series and related padérite: a new occurrence and implications. Can. Mineral., 41, 441–456.

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