

Crystal Data: Hexagonal. *Point Group:* 32, $3m$ or $\bar{3}2/m$. Rarely platy; massive, irregular in grains, to 1.5 mm.

Physical Properties: *Cleavage:* On $\{10\bar{1}1\}$. *Tenacity:* Brittle, somewhat ductile and malleable. Hardness = 4 VHN = 204 $\parallel [10\bar{1}0]$, 277 $\parallel [0001]$ (50 g load). D(meas.) = 15.71 D(calc.) = 15.63

Optical Properties: Opaque. *Color:* Lead-gray, steel-gray, may be tarnished brown; in reflected light, bright white with a slight brownish tint. *Streak:* Black. *Luster:* Metallic. *Anisotropism:* Weak to moderate, dull gray to dull reddish brown; copery brown to bright blue. R_1 – R_2 : (400) 56.3–56.7, (420) 57.5–58.7, (440) 58.6–60.2, (460) 59.4–61.4, (480) 60.2–62.4, (500) 60.7–63.3, (520) 61.4–64.2, (540) 62.1–65.0, (560) 63.0–65.6, (580) 63.9–66.3, (600) 64.7–67.0, (620) 66.2–68.2, (640) 67.0–68.8, (660) 68.3–70.0, (680) 69.1–70.4, (700) 69.7–70.8

Cell Data: *Space Group:* $R\bar{3}2$, $R3m$, or $R\bar{3}m$. $a = 10.713$ $c = 13.192$ $Z = 48$

X-ray Powder Pattern: China.

2.199 (10), 1.895 (8), 1.148 (8), 1.350 (5), 1.325 (5), 0.856 (5), 4.35 (3)

Chemistry:

	(1)	(2)	(3)
Pt	74.93	75.00	75.43
Cu	24.52	24.35	24.57
Au		0.33	
Pd		0.16	
Total	99.45	99.84	100.00

(1) China; by electron microprobe, average of analyses on four grains. (2) Itabira district, Brazil; by electron microprobe. (3) PtCu.

Occurrence: In an actinolized diopside-type of platinum deposit (China); in high-grade hematitic veins in itabirite, typically rimmed by platinum from which copper has been leached (Brazil); in Alpine-type ultramafic intrusives and related placers.

Association: Cooperite, sperrylite, vysotskite, isomertieite, magnetite, bornite, polydymite, diopside, actinolite, epidote (China); sperrylite, isomertieite, atheneite, sudovicovite, palladian gold, platinum, platinian tetra-auricupride (Brazil)

Distribution: In China [originally described from the “Yen” district, a code name, previously given as the “Hong”, “Huang”, or “Hung” district], in Hebei Province, from near Hongshi village, Fengning Co. [TL]. In Russia, in a placer in the Upper Miask River, Southern Ural Mountains; from the Konder massif, Aldan Shield, Sakha; and in placers on the Pustaya River, Kamchatka. From Fox Gulch, Goodnews Bay, Alaska, USA. In a placer on the North Saskatchewan River, near Edmonton, Alberta, Canada. From placers along the Santiago River, Esmeraldas Province, Ecuador. In the Cauê and Conceição iron mines, Itabira district, Minas Gerais, Brazil.

Name: For its occurrence near Hongshi village, China.

Type Material: Institute of Geology, Chinese Academy of Geological Sciences, Beijing, China.

References: (1) Yu Tsu-Hsiang [Yu Zuxiang], Lin Shu-Jen, Chao Pao, Fang Ching-Sung, and Huang Chi-Shun (1974) A preliminary study of some new minerals of the platinum group and another associated new one in platinum-bearing intrusions in a region of China. *Acta Geol. Sinica*, 48(2), 202–218 (in Chinese with English abs.). (2) (1976) *Amer. Mineral.*, 61, 185 (abs. ref. 1). (3) Yu Zuxiang (1982) New data for hongshiite. *Bull. Institute of Geology, Chinese Academy of Geological Sciences*, 4, 78–81 (in Chinese with English abs.) [Yu Zuxiang formerly Yu Tsu-Hsiang]. (4) (1984) *Amer. Mineral.*, 69, 411–412 (abs. ref. 3). (5) Yu Zuxiang (2001) New data for hongshiite. *Acta Geol. Sinica*, 75(3), 400–403 (in Chinese with English abs.). (6) Kwitko, R., A.R. Cabral, B. Lehmann, J.H.G. Laflamme, L.J. Cabri, A.J. Criddle, and H.F. Galbiatti (2002) Hongshiite, PtCu, from itabirite-hosted Au–Pd–Pt mineralization (jacutinga), Itabira district, Minas Gerais, Brazil. *Can. Mineral.*, 40, 711–723. (7) Cabri, L.J., Ed. (1981) Platinum group elements: mineralogy, geology, recovery. *Can. Inst. Min. & Met.*, 109.

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